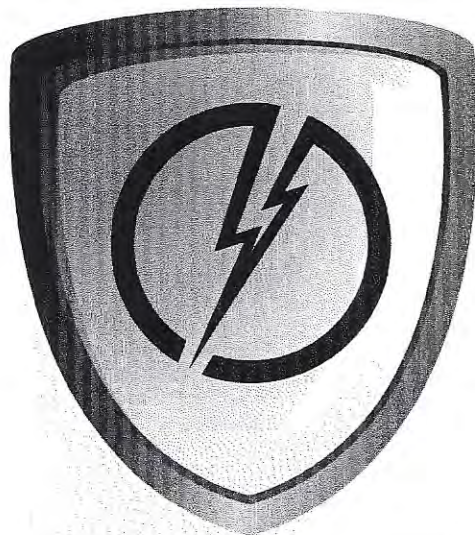


EXHIBIT 22



TASER

TRAINING ACADEMY

Instructor Certification Lesson Plan

VERSION 17

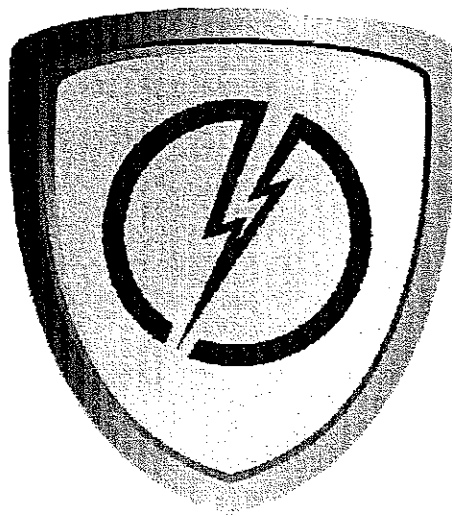
May 2010

TASER[®] X26[™]

Electronic Control Device



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TASER

TRAINING ACADEMY

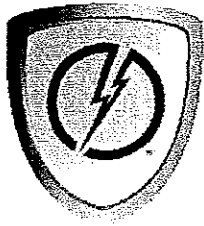
Instructor Certification Lesson Plan

VERSION 17

May 2010

TASER[®] X26[™]

Electronic Control Device



TASER

TRAINING ACADEMY

Instructor Manual

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TASER INTERNATIONAL ECD TRAINING MATERIAL LICENSE AGREEMENT

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TASER grants to the LICENSEE, a nonexclusive, nontransferable, non-assignable, royalty free, non-divisible, and personal right, privilege, and license to co-brand with the trademark "TASER" certificates and merchandise limited to clothing, plaques, and pins associated with the completion of LICENSEE's training classes provided that the trademark "TASER" is used with a graphic symbol of LICENSEE; is not incorporated into the graphic symbol; and is less prominent than the graphic symbol. LICENSEE agrees not to add a trademark of LICENSEE to branded products or merchandise marketed by TASER.

2. CONDITIONS OF LICENSE

LICENSEE agrees not to provide copies of TASER ECD Training Materials, derivatives thereof, photographs, videos, or merchandise permitted by this AGREEMENT to manufacturers, distributors, or trainers of ECDs not marketed by TASER.

LICENSEE is not granted and is prohibited from granting any sublicenses to the TASER ECD Training Materials and from using the TASER Training Materials for a commercial purpose or for monetary gain. In LICENSEE'S training materials and training classes, LICENSEE must use all materials from the TASER ECD Training Materials that cover ECD operation, safety, and warnings as they appear in the TASER ECD Training Materials; however, LICENSEE may add additional information to the TASER ECD Training Materials as part of LICENSEE's instruction of its own personnel and in developing LICENSEE'S own ECD training program.

LICENSEE agrees to identify all ECD Training Materials derived from TASER ECD Training Materials, all photographs, videos, and merchandise as used with permission from TASER. LICENSEE further agrees to include in such identification an acknowledgement as follows: "TASER" is a trademark of TASER International, Inc., used with permission.

LICENSEE agrees to supply to TASER 1 copy of each of the following made or used under this AGREEMENT upon request from TASER: any original or future version of LICENSEE'S ECD training materials derived from TASER ECD Training Materials, 1 copy of each photograph or video, 1 copy of each blank certificate or form bearing the trademark TASER; and 1 photograph of each merchandise item bearing the mark "TASER".

TASER must treat the confidential information of LICENSEE with the same care that TASER exercises in the protection of its own confidential information.

LICENSEE in its training materials and verbal instruction must refer to a weapon that uses electric current to cause pain or to interfere with movement as an ECD (electronic control devices) not as "a taser".

LICENSEE agrees to limit or discontinue its actions under this license in compliance with TASER's review of LICENSEE'S use of the trademark "TASER".

3. TERM. This AGREEMENT continues in full force for a period of 1 year and will automatically renew for additional 1 year periods, and thereafter for additional 1 year periods, unless either party gives prior written notice of termination at least 60 days before the expiration of any such 1 year period. If LICENSEE enters into a license for a newer version of the TASER ECD Training Materials, the all earlier licenses terminate.
4. TERMINATION. In the event the LICENSEE breaches or foreseeably will breach any provision of this Agreement, TASER may give written notice of cancellation to the LICENSEE, and this Agreement will be terminated effective upon receipt of the notice of cancellation. On termination of this Agreement for any reason, LICENSEE will provide within 30 days reasonable assurances to TASER that all uses of TASER ECD Training Materials and their derivatives are discontinued; that all photographs and videos created under this Agreement are no longer available for viewing; and that all inventory of co-branded merchandise is destroyed.
5. RELEASE AND DISPUTES. The LICENSEE releases LICENSOR, its agents, employees and directors from any and all liability, claims and litigation associated with or arising from LICENSEE'S use of the TASER ECD Training Materials.
6. CERTIFICATION. LICENSEE must not designate any student in any of its training classes as being a TASER certified user unless the class is taught by a TASER certified instructor and the student is taught in accordance with TASER ECD Training Materials in their entirety in compliance with this Agreement, and all other minimum certification requirements of the user course are met.
7. VOLUNTEER EXPOSURE. LICENSEE understands that TASER does not require a TASER ECD exposure for instructor or user certification. Any person who volunteers to experience a TASER ECD exposure must sign a TASER Volunteer Release Form *prior* to exposure. LICENSEE is responsible for ensuring that all forms are properly filled out and signed for each volunteer, for keeping the original forms, and faxing a copy of this release form to TASER at the fax number listed on the form.
8. WARRANTIES. THE TASER ECD TRAINING MATERIALS ARE PROVIDED "AS IS" WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED OF ANY KIND, AND TASER SPECIFICALLY DISCLAIMS THE WARRANTIES OF FITNESS FOR A PARTICULAR PURPOSE AND MERCHANTABILITY.
9. RELEASE AND INDEMNIFICATION In consideration of the use of the TASER ECD Training Materials, LICENSEE, its agents and employees release TASER, its agents, employees and directors from any and all liability, claims and litigation associated with or arising from LICENSEE'S use of the TASER ECD Training Materials in any version. In the event that LICENSEE is in breach of this Agreement, uses or presents derivative training materials, or it is alleged that LICENSEE was negligent in conducting a training class, LICENSEE will indemnify and hold TASER harmless from any and all liability, claims and litigation asserted against TASER associated with or arising from such acts or conduct.
10. LIMITATION OF REMEDY IN NO EVENT WILL TASER BE LIABLE FOR ANY SPECIAL, INDIRECT, INCIDENTAL, EXEMPLARY, PUNITIVE, OR CONSEQUENTIAL DAMAGES, HOWEVER CAUSED, WHETHER FOR BREACH OF WARRANTY, NEGLIGENCE, STRICT LIABILITY, OR OTHERWISE, EVEN IF TASER HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES OR IF SUCH DAMAGE COULD HAVE BEEN REASONABLY

FORESEEN, AND NOTWITHSTANDING ANY FAILURE OF ESSENTIAL PURPOSE OF ANY EXCLUSIVE REMEDY PROVIDED HEREIN SOME STATES DO NOT ALLOW FOR THE LIMITATION OR EXCLUSION OF LIABILITY FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATION OR EXCLUSION MAY NOT APPLY TO YOU.

11. RELATIONSHIP. Neither the making of this Agreement nor the performance of the provisions hereof may be construed to constitute the other parties hereto agents, employees, or legal representatives of the other party for any purpose, and this Agreement does not establish a joint venture or partnership, and none of the parties hereto have any right or authority to create any obligation, warranty, representation, or responsibility, expressed or implied, on behalf of the other party in any manner whatsoever.

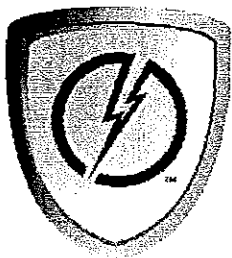
12. WAIVER. In the event that the parties waive any right to a breach by the other party of any of the provisions of this Agreement, such waiver may not be construed as a continuing waiver of other breaches of the same or other provisions of this Agreement.

13. SOLE AGREEMENT. This Agreement constitutes the entire agreement between the parties as to the subject matter hereunder and merges all prior discussions between them, and neither of the parties will be bound by any conditions, definitions, warranties, or representations with respect to any of the terms and conditions other than as expressly provided in this Agreement or as set forth in writing signed by a duly authorized officer or representative of each of the parties.

14. SUCCESSORS. This Agreement and the master license granted inure to the benefit of and are binding upon the parties, their successors, assigns, divisions, subsidiaries, and affiliates.

15. GOVERNING LAW. The terms of this Agreement are construed and interpreted according to the laws of the State of Arizona.

16. NOTICES. All notices required to be given must be sent Federal Express, UPS, or certified mail, return receipt requested, postage prepaid to the last known address of the party, and are deemed to have been given on the date when received by the other party, provided, however, that each party may from time to time change the address to which notices are to be sent by giving written notice of the change to the other party.



TASER

TRAINING ACADEMY

Effective upon release: All previous versions of the TASER system training CDs and DVD's are obsolete upon release of TASER DVD Version 17 and should not be used.

EXPLANATION OF SOME OF THE CHANGES TO TASER INTERNATIONAL, INC'S TRAINING DVD VERSION 17 updated May, 2010

Background: In early 2003, TASER International formed a Training Board (Board) to oversee all aspects of our training programs including development, delivery, and quality control processes. The Board's mission is to provide our instructors and users with the best training materials and support available. Senior Master Instructors conduct quality control observations of some instructor courses to evaluate the training program and the Master Instructor.

GENERAL IMPROVEMENTS:

- 1 Changes to the PowerPoint notes pages are marked by a vertical line in the left margin for significant changes from the previous version. You can quickly scan the pages for major changes. Minor typographical or editorial changes are not indicated
- 2 We added some new videos and updated statistical data slides including field use results, arrest related death (ARD) statistics, etc.
- 3 All relevant information from past training bulletins has been added to the training program

SOME OF THE SPECIFIC CHANGES:

- 1 An instructor's guide has been added to the Training DVD
- 2 A table of contents has been added to the instructor manual
- 3 A glossary of terms has been added to the instructor manual
- 4 Updated and detailed warnings have been added to the instructor manual
- 5 TASER International is now referred to simply as TASER
- 6 The Legal and Medical modules have been updated with more current information
- 7 An annual user informational update is being added. It will be posted on the TASER website and will be mandatory for annual user certification
- 8 The training material licensing agreement has been updated
- 9 Some pages in the instructor manual contain more than one slide from the Power Point Presentation
- 10 The written test has been modified
- 11 The X3 and XREP training has been removed from the instructor course, but they are still demonstrated

IMPORTANT NOTES:

1. Throughout this program, the term electronic control device (ECD) refers to TASER ECDs only
2. Product specifications have been updated; however, everything in this manual is overridden by current product specification sheets. Contact TASER for current product specification sheets
3. Throughout this program, masculine includes feminine and singular includes plural and plural includes singular

Our programs continue to improve because of your input. Please continue to encourage your students to submit course evaluations, and encourage them to contact us at any time with questions, comments, or suggestions about our training programs.

DVD INSTRUCTIONS

The TASER International Version 17 Training DVD can be run on a PC with a DVD-ROM

1. The DVD contains:

- Power Point Presentations of :
 - a. The X26, X3, and XREP instructor and user courses
 - b. M26 Instructor and User courses
 - c. Corrections course
 - d. Gulla's Angled Drive stun
 - e. Scenario Worksheet guide
 - f. TASER Target folder
- A Video Library
- Training Documents
- Support Materials

NOTE: Your PC must have a DVD-ROM to read and interact with the disc. If your PC only has a CD-ROM, it will not be able to read the disc.

2. Running Version 17 materials on a PC

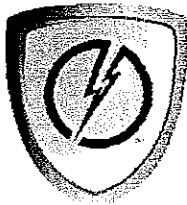
- Insert the Version 17 disc into your PC's DVD-ROM drive
- If your Auto-play is activated on your PC a "pop-up" window will ask you what action you would like to take. Select **"Open folder to view files"** to view all contents of the Version 17 disc.
- If auto-play is not activated, go to **"My computer"** and double click the DVD-ROM icon to view the Version 16 disc contents. The training PowerPoint's are located in the **"V-17 folder"**. Here you can select the PowerPoint you need.

3. Downloading training materials to a PC (This is highly recommended as the PowerPoint's run smoother)

- Insert Version 17 disc into your PC's DVD-ROM drive.
- If auto-play is activated on your PC a pop-up window will ask what action you would like to take. Select **"Open folder to view files"** to view all contents of the Version 17 disc.
- If auto-play is not activated, go to **"My Computer"** and double click on the DVD-ROM icon to view the Version 17 disc contents.
- Using your mouse right click and hold the **"V-17 File"** and drag and drop the folder onto the desktop or a destination of your choice on your PC. This will copy the entire contents onto your hard drive. The PowerPoint's are located in the **"V-17 folder"**. From there you can select the PowerPoint you need.

NOTE: If copying the DVD training programs to a hard drive, you must copy the entire training folder. If the entire folder is not moved, the PowerPoint presentations will be unable to "link" to the video clips in the PowerPoint.

4. **Instructor Course:** This is the course used by Master Instructors to train instructors as part of the 20-hour instructor course. There is a separate folder for the M26 Instructor course.
5. **User Courses:** User courses are provided for the X26, X3, XREP and SHOCKWAVE. They are to be used by TASER International certified instructors to train end users. Instructors are encouraged to add department policies and tactics as part of the course material.
6. **Corrections Course:** This folder contains a PowerPoint presentation which addresses the specific areas of Corrections and is to be used as an addition to the Instructors and user courses. The folder also contains Corrections videos.
7. **Gulla's Angled Drive Stun:** This PowerPoint shows how the drive stun may be more effective if used on an "angle" to create NMI in a 3 point deployment.
8. **Scenario Worksheet Guide:** This presentation gives instructors guidance for setting up and running Live Simulation scenarios.
9. **TASER Target folder-** this folder contains information on the new conductive targets (featuring the preferred target zones) offered by TASER International as well as instructions for making target stands.
10. **Video Library:** The associated video clips will play automatically when the instructor "clicks" the mouse on the appropriate PowerPoint slide. In addition, you can play a specific video clip at any time by clicking on the video icon in this folder.
11. **Training Documents:** This folder contains documents used in the instructor certification course, including tests, answer keys, user and instructor applications, pre-deployment checklists, checklists to be used before and after training courses, certificates, and forms that must be completed and returned after each instructor's course.
12. **Supplemental Materials:** This folder contains multiple sub-folders with additional information that may be valuable to instructors, users, and their departments. Instructors should refer to these documents, as there are a multitude of resources for training, ineffective use analysis, in arrest related death information, and much more.



TASER

TRAINING ACADEMY

INSTRUCTOR CERTIFICATION COURSE OUTLINE

- A. **OVERVIEW:** This class will cover the certification of instructors in the training and use of the TASER X26 and M26 ECD's.
- B. **TERMINAL LEARNING OBJECTIVES:** Given person(s) to be trained and a lesson plan, instruct person(s) in the operation and safety of the TASER X26 and M26 ECDs.
- C. **ENABLING LEARNING OBJECTIVES:** Without the aid of references, in accordance with the detailed lesson plan and manual, a certified trained user will accomplish the following at a reasonable level of understanding and proficiency:
 - 1. Pass the written test and demonstrate sufficient proficiency in the function and use of the TASER ECDs.
 - 2. Understand how TASER ECDs are designed to override and control the sensory and motor functions of the nervous systems of a combative subject.
 - 3. Know proper finger position for aiming, firing, discharging, and re-energizing.
 - 4. Be able to reload in a safe and proper manner.
 - 5. Control unit adequately when commanded "Arm - Spark - Safe" at random (understands safety switch and trigger fully).
 - 6. Know when the TASER ECD is armed and ready to deploy.
 - 7. Know how to properly check battery pulse rate, remove and reinstall batteries correctly of TASER ECDs
 - 8. Know how to utilize the LASER and fixed sights.
 - 9. Understanding of probe placement.
 - 10. For TASER certification.
 - a. Draw TASER X26 or M26 ECD and hit target at various distances under stress, placing both probes in preferred target zones.
 - 11. Learn procedures to properly and reasonably safely remove probes from subject.

D. **METHOD / MEDIA:** This class will be taught by the online / lecture / demonstration / scenario / questions and answers method.

E **EVALUATION:** Topics from this class will be evaluated via written tests and via performance checklist during the practical applications conducted during the class.

COURSE TIME:

Instructor Certification Course: 20 hours

Instructor Recertification Course: 16 hours

User Certification Course:

X26: 6 hours minimum

X3: 6 hours minimum

XREP/X12: 2 hours minimum

AXON/EVIDENCE.COM: No minimum course requirements

CERTIFICATION: TASER Instructor certification is valid for two years from the date of certification
TASER user certification must be renewed every calendar year

SUPPORT MATERIALS CHECKLIST V17 DVD

NOTE: The Version 17 training DVD contains a folder titled SUPPORT MATERIALS. This folder contains supplemental information on the topics listed below. The information contained in these documents may not be the most current information available, and some of the information is from outside sources and has not been deemed accurate by TASER. The information is provided for reference only. Refer to the most current version of the training syllabus and current Training Bulletins for the latest information, or contact TASER for additional information.

1. Angled Drive Stun
2. CDPM
3. Critical Incidents
4. Forms and Certificates
5. Ineffective Use Checklist
6. Legal
7. Public Information Resource Kit
8. Scenario Based Training Worksheet
9. TASER Targets
10. Unintentional Shootings
11. Use of Force Forms
12. DVD Instructions and trouble Shooting
13. Voluntary Exposure Guidelines & Forms
14. Warnings



TASER

TRAINING ACADEMY

Voluntary Exposure Guidelines

WARNING: Strict adherence to all safety guidelines contained in the syllabus is mandatory. Probe deployments must be to the back of the torso or back of the legs only. Probe deployments to the front of the torso are prohibited to prevent accidental hits to the face, throat, eyes, or other sensitive parts of the body. Use proper bio hazard procedures when removing probes that have penetrated the skin.

Remember, volunteer exposure is not mandatory. Every student volunteering for a TASER ECD exposure **MUST first read, understand, agree to, and sign the current Instructor or User Warnings, Risks, Liability Release and Covenant Not to Sue.** The instructor must read the form for any physical or mental conditions that could be aggravated by the exposure and either reasonably work around the condition if reasonably possible or waive the exposure. However, it is solely the student's decision and full acceptance of all risks to continue. The Master Instructor may also deny a student to be exposed.

Before starting the demonstrations, provide the class a chance to take a break and use the restroom facilities. This can help prevent an unnecessary embarrassment to a volunteer who becomes overly nervous before or during the demonstration.

When conducting the volunteer demonstrations, Master Instructors should expose the students to a variety of possible probe placements. This will reinforce the remainder of the syllabus when discussing probe placement, missed probes, drive-stun backup, etc. Once a reasonable number of different probe placements have been demonstrated, the remainder of the volunteer exposures should be done with the student face down on the mat and probes or clips deployed to the legs only. This is done to further minimize risk of injury due to muscle contractions or falling. Students may elect to have a full 5-second deployment or a shorter exposure.

Exposures should always be done on proper matting in an area that is clear of any hazards that a volunteer or spotter might trip on or hit while falling.

Exposing two or three students simultaneously with a single X3 ECD will require additional precautions. First, if the students are standing, each will require two spotters as with any other exposure. Second, you will need a large matted area where the volunteers can be safely lowered without risk of spotters interfering with each other. Consider having students lie face down a safe distance from each other for these types of volunteer exposures. Remember that the first and second students exposed may

receive more than a five second exposure if the X3 ECD is allowed to run a full five second cycle after discharging the third cartridge.

All volunteers should stretch thoroughly before taking their volunteer exposure. This includes the back, torso, legs, and shoulders.

Procedures for Spotters:

- Always use two spotters when volunteers are standing
- Spotters must hold the volunteer under the armpit to avoid twisting or putting undue pressure or stress on the shoulder or arm
- The volunteer should be carefully supported and lowered to the ground during the cycle

Procedures for Using Live Cartridges with Probes

- Ensure that volunteer and spotters are wearing eye protection and looking away from the weapon. The dart will likely penetrate eye protection.
- Always deploy probes to the back (back or legs) of volunteer consistent with preferred target zones and warnings
- Aim weapon slightly to one side or the other of the torso to prevent lower probe from passing between legs
- Be sure the area beyond the volunteer is clear of any bystanders or equipment that could be damaged by a probe strike.
- Probe placement should simulate realistic deployments

Wire/Clip attachment

- If using cartridge wires (no clips available), remove probe and tape or secure wires to the volunteer. If using clips, secure firmly.
- Attach wires/clips to preferred target zones of the volunteers (legs, back, abdomen) in a manner that simulates field deployments
- Demo low muscle mass (oblique) hit and show that volunteer may fight through it. Then move one probe farther away or drive stun (X26 ECD) to provide a better probe spread and greater effectiveness.
- Ensure spotters use proper procedures to minimize risk of injury

Drive Stun

- The X3 ECD leaves more significant signature marks than the X26 ECD because it is arcing across three sets of electrodes as opposed to just one set. Therefore, the risk of skin damage and scarring is greater. For this reason we do not recommend using the X3 ECD for drive stuns on students during training.
- Volunteer should either be standing with spotters or laying down on matting
- Drive the weapon into volunteer in instructed areas (pressure points). Do not use the carotid or groin pressure points for demonstration purposes as they could have greater risk of injury
- Apply only one wire/clip to subject and follow up with drive stun

TASER International Products Glossary



This document provides TASER employees, instructors, and users of TASER® electronic control devices (ECDs) the current, correct terms for TASER International products.

3-Up Kit A kit consisting of three stacked **Shockwave™ security systems** mounted in a rack mount case. The 3-Up Kit includes one 50-meter cable, one 0.6-meter cable, two 0.2-meter cables, one control box, one rack mount case, and one AC/DC adapter. The kit is designed for one-man carry. It has removable front and back doors and includes adjustable elevation knobs. See also **6-Up Kit**

6-Up Kit A kit consisting of six **Shockwave™ security systems**. It includes one 50-meter cable, two 0.6-meter cables, four 0.2-meter cables, one control box, one ruggedized wheeled carry case, and one AC/DC adapter. The kit has custom foam molding and a through-case recharging system. See also **3-Up Kit**

ADVANCED TASER® electronic control device The **M18™**, **M18L™**, **M26™**, and **MX™** electronic control devices.

AFID – anti-felon identification Small, round, paper and plastic tags bearing printed identifying information, included in a **TASER® cartridge**

AIR TASER 34000™ electronic control device The first **ECD – electronic control device** developed and manufactured by AIR TASER, Inc. Production of this product ended in 2001

Animal TASER electronic control device See **MX™ electronic control device**

ARC Switch – Arc display/Re-energize/Cartridge advance An ambidextrous switch on the **X3™ electronic control device** that through a momentary press and release will move the cartridge selector to the next available cartridge to the right. A continuous press will deliver an **NMI – Neuro Muscular Incapacitation** discharge for a **Warning Arc display, drive-stun**, or any discharged cartridge wires.

ATC – AXON Tactical Computer The tactical computer portion of the **TASER AXON™** system.

AXON See **TASER AXON™**

AXON™ EVIDENCE.COM™ system A total system including three main components: the **TASER AXON™** tactical computer, the **ETM – evidence transfer manager**, and **EVIDENCE.COM™** services

back (ARMED) The safety switch on a control box is moved to the back position to arm a **Shockwave™ security system**. In this mode, the safety is “off.”

battery tray The battery tray of an **ADVANCED TASER® electronic control device** holds AA batteries. The battery tray is inserted into the handle of an **ADVANCED TASER ECD** like the magazine in a semi-automatic handgun.

blast door Plastic doors on the front of a **TASER® cartridge** that come off when the cartridge is deployed. Blast doors provide protection to the cartridge before use. On all pre-**TASER® X3™** products, the blast doors have a conductive material that aids the deployment process. An unexpended cartridge missing its blast doors is less reliable and thus is unsuited for field use.

Blue Cartridge See **LS – live simulation**

BUFFERING mode This is one of several operating modes for the **TASER AXON™** system. Video operates on a continuous loop in **BUFFERING** mode, but it is not downloadable or stored and there is no audio. This allows you to capture pre-event video up to one minute prior to activating **EVENT mode**, saved as part of the event.

C2™ electronic control device A **TASER ECD – electronic control device** that has the **NMI – Neuro Muscular Incapacitation** capability and is designed for the citizen market

C2™ Personal Protector The full name for the **C2™ electronic control device**.

CAM-Lock™ Safety The safety toggle in the **X3™ electronic control device**. The **CAM-Lock Safety** is mechanically locked in place between two elements of the chassis system to prevent the toggles from breaking free. This design also snaps the safety switch into the **down (SAFE)** and **up (ARMED)** positions, giving the user a positive feel for the position of the safety and making sure the safety is always fully **SAFE** or **ARMED**

cartridge release button A button on the **X3™ electronic control device** used to disengage the locking mechanism, allowing the operator to remove all three cartridges.

CCDPM™ battery pack – configure controlled digital power magazine A green **DPM™ battery pack – digital power magazine** used to program an **X26E™ electronic control device** to work with the **CDPM™ battery pack – controlled digital power magazine**.

CDPM™ battery pack – controlled digital power magazine A **DPM™ battery pack – digital power magazine** equipped with a lanyard and programming to render an **X26E™ electronic control device** inoperable when the connection between the **CDPM** and **X26 ECD** is broken for more than two seconds.

channel sight One of two grooves in the top of a **Shockwave™ security system** designed to sight the **ECD**

TASER International Products Glossary



Charge Diffusion™ Probes Smart™ Cartridge probes designed for optimal NMI – Neuro Muscular Incapacitation pulse delivery.

chassis The portion of an XREP™ electronic control device – eXtended Range Electronic Projectile that contains the XREP™ engine and Cholla electrodes

Cholla A type of TASER probe, part of the XREP™ electronic control device – eXtended Range Electronic Projectile.

CID – central information display (1) A digital display on an X26™ electronic control device that indicates a variety of data, including remaining battery life and, when the ECD is triggered, counts how many seconds remain in the cycle. The CID blinks when the TASER CAM™ recorder (if used) is covered. (2) A color display on an X3™ electronic control device that provides a graphical user interface allowing a user to quickly observe system status information and a variety of data. This includes remaining battery life, and which type of cartridge is in the firing bays, which bay is activated, and how many seconds remain in the cycle

closed (SAFE) The safety cover on a C2™ electronic control device is moved to the closed position to render it unable to deploy

collapsible electrode cowling A soft, silicone rubber cover that houses the frontal electrodes in an XREP™ electronic control device – eXtended Range Electronic Projectile. The cowling folds back as the electrodes make contact with the target

ComHub Communication HUB. The portion of the TASER AXON™ system integrating the radio, HeadCam, and ATC – AXON Tactical Computer. The ComHub also contains the radio PTT – push to talk switch as well as controls for activating the EVENT mode, PRIVACY mode, and volume controls. The ComHub may include additional features in future generations.

control box A component of the Shockwave™ security system used to arm, safe, and operate a Shockwave ECD – electronic control device.

CPU – Central Processing Unit module The portion of the X3™ electronic control device containing the primary microprocessor and control system; communication bus to other modules; top laser; and color display.

cycle A pulsed energy burst from a TASER ECD – electronic control device. With most TASER ECDs, the cycle is normally 5 seconds long.

dataport A port in the M26™ electronic control device used for downloading, recharging, and remote deployment.

DCDPM™ battery pack – de-configure controlled digital power magazine A red DPM™ battery pack – digital power magazine with special programming designed to deprogram a CDPM-configured X26E™ electronic control device to work with a standard DPM again.

deploy To use a TASER ECD – electronic control device.

deployment Use of a TASER ECD – electronic control device.

down (SAFE) (1) The safety switch on an M26™ or X26™ ECD – electronic control device is moved downwards to render it unable to deploy. (2) The switch guard on a Shockwave control box is moved downwards to render it unable to deploy. (3) The CAM-Lock™ Safety on an X3™ electronic control device is moved downwards to render it unable to redeploy.

DPC™ circuit – digital pulse controller An internal circuit including the X26™ microprocessor and support hardware. The DPC measures the time between each shaped pulse and regulates the power throughput of the pulse generator to maintain the desired pulse rate.

DPM™ battery pack – digital power magazine A battery pack used with the X26™ electronic control device that holds lithium energy cells and additional circuitry. The DPM is inserted into the handle of an X26 ECD like the magazine in a pistol. The DPM is sometimes called “the battery.”

DPM release button A button in the X26™ electronic control device that is pressed to release the digital power magazine. When inserting a DPM battery pack into an X26 ECD – electronic control device, the DPM release button should pop out with an audible click.

drive-stun A technique in which a TASER ECD – electronic control device is placed directly against the subject, and the electrical discharge is transmitted through metal conductors on the TASER device or on an expended cartridge. A drive-stun affects the sensory nervous system (pain compliance) and usually does not cause NMI – Neuro Muscular Incapacitation.

ECD – electronic control device Any device that uses electricity to affect a subject. The following brands and model names identify TASER ECDs: AIR TASER 34000™, C2™, M18™/M18L™, M26™, MX™, Shockwave™, X3™, X26™, and XREP™ are electronic control devices.

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elevation spike A support system used with a **Shockwave™ security system**. Elevation spikes have pointed feet and are intended to be used as the rear legs of the system. See also **frontal support**.

Engineering Log™ Part of the **Trilogy™ Log**, the Engineering Log monitors the performance of every key sub-system within the **X3™ electronic control device** and provides alerts to the user if any subsystems are not performing properly and if maintenance is advisable.

environmentally hardened The **X3™ electronic control device** is designed to resist sea spray, rain, dust, and electrostatic discharge.

EPM™ battery pack – enhanced power magazine A battery pack used with the **X3™ electronic control device**. The EPM has an enhanced locking system to keep the battery secured to the ECD.

EPM™ lock release A button on the **X3™ electronic control device** that is pressed to release the enhanced power magazine.

EPM™ release After pressing the **EPM™ lock release**, pull on the lower portion of the enhanced power magazine to remove it from the **X3™ electronic control device**.

ETM – evidence transfer manager A secure piece of equipment that interfaces with the **TASER AXON™ tactical computer** for automated download of files, transfer to the **EVIDENCE.COM™** site, and deletion of files from the AXON computer after downloading. See also **SYNAPSE™ ETM – SYNAPSE™ evidence transfer manager**.

ETM cradle An ETM fixture that accepts an **ATC – AXON Tactical Computer** for recharging and downloading. There are three cradles in an **ETM docking bar**.

ETM docking bar An ETM docking bar has three cradles for docking up to three **ATC – AXON Tactical Computers**. There may be up to eight ETM docking bars in an **ETM rack**.

ETM rack The entire ETM assembly including the server, switches, UPS, and up to eight docking bars.

Event Log™ Part of the **Trilogy™ Log**, the Event Log records common user input events such as safety being **down (SAFE)** or **up (ARMED)**, **trigger switch presses**, **Warning Arc displays**, firmware updates, and time updates.

EVENT mode This is one of several operating modes for the **TASER AXON™ tactical computer**. **EVENT** mode records and stores to memory audio and video regardless of the previous mode. **EVENT** mode captures up to one minute of **pre-event video only** if the AXON tactical computer was in **BUFFERING mode** prior to entering **EVENT** mode.

EVIDENCE.COM™ Services provided by TASER International for online access, secure offsite storage, and evidence retrieval.

EVIDENCE SYNC™ cable A download software and download cable for use with the **TASER AXON™ tactical computer**.

eXoskeleton™ holster A holster designed by TASER International and manufactured by Blade-Tech Industries for the **X26™ electronic control device**.

expended A **TASER® cartridge** that has been deployed and the compressed nitrogen canister is punctured. Though an expended cartridge no longer has its probes, it can still be used in the **drive-stun** mode.

exposure When a subject receives a deployment of TASER probes in an operational deployment or voluntarily. See also **volunteer exposure**.

Fire Control and Targeting module The portion of the **X3™ electronic control device** that contains the **Independent Fire Control System**, **standard-range laser**, **long-range laser**, and **Focused Beam LED Flashlight system**.

Focused Beam LED Flashlight system The lighting equipment for the **X3™ electronic control device**. This intelligent system senses ambient light conditions and can be configured to automatically brighten, dim or even turn off the flashlight in response to external lighting conditions and adjust display brightness for optimal performance.

fracture pins A series of pins fixed to an **XREP chassis**, to which the **nose assembly** is attached. Upon impact, these pins are sheared by the nose, thus releasing the nose assembly from the chassis.

frontal electrodes The four forward-facing electrodes in a **XREP™ electronic control device – eXtended Range Electronic Projectile**.

frontal support A support system used with a **Shockwave™ security system**. Frontal supports have flat feet and are intended to be used as the forelegs of the system. See also **elevation spike**.

Graphical User Interface The **CID – central information display** in an **X3™ electronic control device**. The X3 CID is a full color screen featuring internationally recognizable color icons and multilingual menu support to show the types of cartridges loaded, whether they have been deployed, battery status, burst count down, and total burst time, and other information.

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headband Used with the HeadCam to keep it on the wearer's head.

HeadCam The portion of the TASER AXON™ system that is worn above the neck and contains the speaker, microphone, imager, and infrared (IR) illuminator.

High Voltage NMI module The portion of the X3™ electronic control device containing the Rotational-Pulse Drive™ and the PCS™ – Pulse Calibration System

hit An event involving a subject who receives a deployment of TASER probes in an operational deployment or volunteer exposure.

Independent Fire Control System A dedicated low voltage system in the X3™ electronic control device that operates independently of the high voltage NMI system, allowing the Rotational-Pulse Drive™ to deliver live NMI bursts across the cartridge array without deploying a cartridge. The independent fire control system enables the Warning Arc display. The system also detects the types of cartridges loaded in the X3 ECD. In the unlikely event a given cartridge fails to deploy, the Fire Control System will automatically transition to discharge the next cartridge in succession in a matter of milliseconds – so fast, the user would not perceive that a misfire occurred except for the “failed cartridge” icon on the graphical user interface on the X3 ECD's color CID – central information display

illumination selector A button on the X26™ family of electronic control devices used to control the LIL – low intensity lights and laser settings.

illuminator See Focused Beam LED Flashlight system

intelligent electrode selection™ technology A technique wherein an onboard microprocessor inside the XREP™ electronic control device – eXtended Range Electronic Projectile monitors to detect connections between different electrodes and automatically redirects NMI – Neuro Muscular Incapacitation discharges to a preferred pair of electrodes

lateral connection slot A slot on the side of a Shockwave™ security system designed to fit a lateral connection tab on another Shockwave system, linking the units together.

lateral connection tab A tab on the side of a Shockwave™ security system designed to fit a lateral connection slot on another Shockwave system, linking the units together

LIL – low intensity lights The two LED lights installed on an X26™ electronic control device.

long-range laser One of three laser sights used with the X3™ electronic control device. The long-range laser has a 4-degree spread between itself and the top laser. The long-range laser is automatically selected for 35-foot cartridges. See also standard-range laser.

lower mounting bracket A steel bracket on the bottom of a Shockwave™ security system to allow attaching the system to a fixed structure or stacking atop another Shockwave system.

LPM – lithium power magazine The battery in a C2™ electronic control device. The LPM is similar in concept to the battery tray used in the M26™ electronic control device and the DPM™ battery pack – digital power magazine used in the X26™ electronic control device.

LS – live simulation A TASER® cartridge designed not to conduct energy; it is used for some training scenarios. An LS cartridge is molded in blue, and sometimes called an LS (blue) cartridge, LS (blue) training cartridge, or training cartridge.

LS (blue) cartridge, LS (blue) training cartridge See LS – live simulation.

M18™ electronic control device A citizen version of the M26™ electronic control device. The M18 does not have a laser sight. This product was discontinued in May 2009.

M18L™ electronic control device An M18™ variant that has a laser sight. This product was discontinued in May 2009.

M26™ electronic control device Introduced in 1999, the first TASER ECD featuring the NMI – Neuro Muscular Incapacitation capability.

M26C™ electronic control device A citizen version of the M26™ electronic control device.

Magnesium Transporter™ Holster A holster designed for the X3™ electronic control device. The Magnesium Transporter Holster is designed to provide maximum security and reliability while reducing overall size and weight.

manual mode An operating option for the X3™ electronic control device. In the manual mode, pressing the trigger switch deploys a Smart™ Cartridge but does not select additional cartridge. Thus, pressing the trigger switch more than once will not deploy additional cartridges. To select the next cartridge, press and quickly release (tap) the ARC Switch – Arc display/Re-energize/Cartridge. (Pressing and holding the ARC Switch also provides a Warning Arc display.) See also semi-automatic mode.

MDU – muscular disruption unit A TASER International unit of measure of an electronic control device's ability to incapacitate a subject. The M26™ electronic control device is rated at 100 MDUs; the X26™ electronic control device is rated at 105.

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mounting rail A component of the **unibody frame construction**, the mounting rail makes the **X3™ electronic control device** available to external mounting options.

multi-shot ECD An **ECD – electronic control device** that can be deployed against more than one target at distance without reloading. See also **X3™ electronic control device**.

MX™ electronic control device An **ADVANCED TASER® electronic control device** designed for use on large animals. The MX ECD is not intended for use on humans. The MX ECD is also called the **Animal TASER electronic control device**, **MX Animal TASER electronic control device**, and **MX Animal Control electronic control device**.

NiMH – nickel metal hydride A type of rechargeable battery. The Energizer® NH15-AA is the only rechargeable battery recommended for use in the **M26™ electronic control device**.

NMI – Neuro Muscular Incapacitation An electrical effect on the motor nervous system and skeletal muscles causing physical incapacitation. The **C2™ electronic control device**, **XREP™ electronic control device – eXtended Range Electronic Projectile**, **Shockwave™ security system**, and **M26™, X3™, and X26™ ECDs** affect a subject through NMI.

nose assembly The detachable nose section of an **XREP™ electronic control device – eXtended Range Electronic Projectile**. The nose assembly includes the **collapsible electrode cowling**, **nose frame**, **fracture pins**, **frontal electrodes**, and **reflex engagement electrodes**.

nose frame A hard polymer frame that holds the frontal electrodes and incorporates the black rubber overmolding that covers the frontal electrodes on an **XREP™ electronic control device – eXtended Range Electronic Projectile**.

open (ARMED) The safety cover on a **C2™ electronic control device** is moved open to enable it to deploy. This also enables other functions, including the laser sight. In this mode, the safety is “off.”

orientation key An arrow that points toward the front of a **Shockwave™ security system**.

PCS™ – Pulse Calibration System A technology that monitors, calibrates, and records the charge and discharge voltage for each and every **NMI – Neuro Muscular Incapacitation** pulse delivered by the **X3™ electronic control device**. Up to 225 individual pulses are measured and recorded in a standard five-second burst (utilizing all three bays). The ECD also calibrates the charge level of every pulse based on the characteristics of the previous pulse.

The PCS constantly optimizes output of the **Rotational-Pulse Drive™** to deliver precisely the amount of electric charge needed to cause optimal incapacitation while providing maximum safety. This continuous monitoring and calibration of electrical output yields a **Precision Shaped Pulse™** that provides more consistent effects on the target and improved safety characteristics. In addition to recording calibration data, the system provides the operator a real-time visual icon on the color **CID – central information display** that indicates whether the system is maintaining electrical connection to the target with green, yellow, and red icons. The color display also shows the type of cartridges loaded and their effective range.

Perspective Hopping An **EVIDENCE.COM™** feature that allows the user to move between multiple views when more than one **AXON** unit is at a scene, thereby giving the viewer multiple perspectives.

POC – Power Optimization Control A system in the **X3™ electronic control device** that continually monitors the power remaining in the battery pack and, when needed, shuts down peripheral functions to maintain critical **NMI – Neuro Muscular Incapacitation** capability while warning the user when the battery power reaches low levels.

Precision Shaped Pulse™ An optimized **Shaped Pulse™** technology built into the **X3™ electronic control device**.

pre-event video A feature of the **TASER AXON™** system, pre-event video (not audio) is a one-minute buffer that is captured when the **EVENT mode** is activated.

PRIVACY mode This is one of several operating modes for the **TASER AXON™** system. In **PRIVACY mode**, audio and video recording are completely deactivated. Pre-event capture is disabled.

probe The projectile of a **TASER® cartridge**. A probe is also called an electrode.

Protector A brand for telecommunication services under development by TASER International.

PTT – push to talk A switch mounted on a radio or on a separate module (e.g., a **ComHub**) that must be depressed to transmit over a police radio.

Pulse Log Part of the **Trilogy™ Log**, the Pulse Log stores the electric characteristics of every pulse emitted from the **X3™ electronic control device**.

Radial Key™ ammunition technology A proprietary, patent-pending technology designed to prevent the **TASER™ X12™ Less-Lethal Shotgun (LLS)** system from accepting lethal 12-gauge rounds, eliminating the possibility of loading lethal ammunition during high-stress situations.

RADLS – Range Adjusted Dual Laser System An **X3™ electronic control device** module that tracks which cartridge type is selected and activates the related paired-laser targeting system. The **top laser** indicates the point of aim for the top probe. The **standard-range laser** is illuminated for the standard 15-foot and 25-foot cartridges, aligned to the new 7-degree

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downward trajectory The **long-range laser** is aligned to the 3-degree downward trajectory for the long-range 35-foot cartridge and illuminates when a 35-foot cartridge is selected. The user can configure either the top or bottom laser to flash – making orientation easier.

recoil electrode deployment A new technique, used with the **XREP™ electronic control device – eXtended Range Electronic Projectile**, designed to spread a secondary electrode contact on target by redirecting energy from the impact of the projectile to launch the secondary electrode away from the subject on a tether, which re-engages at a separate body location.

re-energize button A button on the **Shockwave control box** used to apply additional energy to previously deployed cartridges without deploying additional, as-yet-undeployed cartridges.

reflex engagement electrodes A method, built into the **XREP™ electronic control device – eXtended Range Electronic Projectile**, which uses the reflexes of the target to attach secondary electrodes which separate from the initial point of impact for enhanced **NMI – Neuro Muscular Incapacitation** effects.

Rotational-Pulse Drive™ An **X3™ electronic control device** technology that delivers **Precision Shaped Pulse™** discharges sequentially to multiple electrode sets, rotating the pulses across multiple cartridge bays at a rate of up to 45 times per second. This alternation of pulsed output across multiple cartridges allows the ECD to incapacitate up to three subjects simultaneously. The Rotational-Pulse Drive also supports the **X-Connect™** technology.

safety cover A safety fixture of the **C2™ electronic control device** that is moved **open (ARMED)** or **closed (SAFE)** to arm the ECD or render it unable to deploy, respectively.

safety switch (1) A lever on the **M26™** and **X26™** TASER electronic control devices that is moved **up (ARMED)** or **down (SAFE)** to arm the ECD or render it unable to deploy, respectively. (2) A toggle switch on a **Shockwave control box** that is moved to the **back (ARMED)** position to arm the ECD.

selector switch A button on the **X3™ electronic control device** used to used to change illumination settings and other ECD configuration.

semi-automatic mode An operating option for the **X3™ electronic control device**. In the semi-automatic mode, pressing the **trigger switch** deploys a **Smart™ Cartridge** and selects the next available cartridge. Thus, pressing the trigger switch three times will deploy all three cartridges. Pressing and holding the **ARC Switch – Arc display/Re-energize/Cartridge** applies energy to deployed cartridges (and/or providing a **Warning Arc display**). See also **manual mode**.

serialization plate A plate installed on the top of an **X26™ electronic control device** that bears that particular ECD's serial number.

Shaped Pulse™ technology TASER patented technology that uses high-voltage electricity to create a spark followed by low-energy electrical impulses to affect the peripheral nervous system. The **X26™ electronic control device** uses Shaped Pulse technology.

shock plate A black or silver stainless steel plate that decorates each side of an **X26™ electronic control device**. The shock plate incorporates a TASER International logo. Shock refers to mechanical, not electrical shock.

Shockwave™ security system A manually activated TASER security system that simultaneously fires six TASER cartridges to saturate an area with TASER NMI. The Shockwave ECD design is modular; they can be linked together side to side to cover wider areas; they can be stacked to provide multiple discharge salvos; and they can be independently deployed in just about any configuration to cover just about any area size and shape imaginable. The Shockwave ECD is part of the **TRAD™ family – TASER® Remote Area Denial System** of TASER systems. The full name for this product is **TRAD Shockwave™ security system**.

Sim Suit See **TASER Simulation Training Suit**

Smart™ Cartridge The cartridge designed for the **X3™ electronic control device**. A Smart Cartridge communicates with the **Independent Fire Control System** within the X3 ECD, indicating the type of cartridge loaded in each bay and its deployment status. The Smart Cartridge contains the nitrogen propulsion system, probes, **TASER wire**, and **AFID – anti-felon identification** tags sealed behind a rugged, weatherproof blast door. The new static-resistant propulsion system allows **Warning Arc displays** without firing the cartridges – which also reduces the risk of accidental static discharge misfires.

Smart Cartridges are available in 15-, 25-, and 35-foot lengths. Training versions of the Smart Cartridge are available in 25- and 35-foot lengths.

Smart Cartridges will not work in the **ADVANCED TASER®, C2™, Shockwave™, or X26™** systems.

SPM™ – Shockwave power magazine battery pack A rechargeable battery for the **Shockwave™ security system**.

standard-range laser One of three laser sights used with the **X3™ electronic control device**. The standard-range laser has a 7-degree separation between it and the **top laser**. The standard-range laser is automatically selected for 15- or 25-foot cartridges. See also **long-range laser**.

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switch guard A fixture on a Shockwave™ security system's control box that covers the safety switch. When the switch guard is in the **up (OPEN)** position, the operator has access to the safety switch. When the switch guard is in the **down (SAFE)** position, the Shockwave system is rendered unable to deploy.

SYNAPSE™ ETM – SYNAPSE™ evidence transfer manager A docking station that simultaneously recharges the A TC – AXON Tactical Computer and uploads all data captured from the officer's point-of-view during the shift to EVIDENCE.COM™.

TACOM™ technology A close-range wireless communications capability designed to integrate command and control of future TASER electronic control devices that are TACOM compatible.

TASER® An acronym for Thomas A. Swift's Electric Rifle. For ECDs, TASER is a registered trademark of TASER International, Inc. in certain countries. When used as a noun it refers to TASER International, Inc. When used to describe a TASER product, it should always be used as an adjective, usually with the term "electronic control device (ECD)." Please verify with the Legal Dept. proper use of TASER® for use on a product other than an ECD (e.g., merchandise, software). The trademark registrations for other products may be pending and not yet registered.

TASER AXON™ tactical computer An on-officer tactical computer that has the capability to record audio and video from the officer's perspective and other features, including playback of video with protection from alteration or erasure narration to allow officers to use audio notes for future reference and electronic completion of required forms. The system is expandable to accommodate future features including GPS, live video streaming, etc.

TASER CAM™ recorder An audio-video (black and white) recording accessory that replaces a DPM in the X26™ electronic control device. The TASER CAM is rechargeable.

TASER® cartridge A part of a TASER electronic control device that includes the probes, wire, and gas capsules.

TASER Foundation A nonprofit 501(c) 3 organization that provides financial support to the families of fallen law enforcement officers in the United States and Canada.

TASER International, Inc. The Company, also referred to as TASER.

TASER Simulation Training Suit Also called a Sim Suit, a suit providing full body protection and designed to be used with the LS – live simulation cartridge.

TASER wire The insulated, high-voltage wire used in a TASER® cartridge.

TASER™ X12™ Less-Lethal Shotgun (LLS) A Mossberg® 500 12-gauge shotgun modified for optimal functioning with the XREP™ electronic control device – eXtended Range Electronic Projectile.

TASER Yellow™ A shade of yellow for example used on the stock and fore end of the TASER™ X12™ Less-Lethal Shotgun (LLS) to identify it as marketed by TASER International.

top laser A laser sight built into the upper frame of the X3™ electronic control device.

torsion spring fins A flight stability technology that uses spring-deployed fins to spin-stabilize an XREP™ electronic control device – eXtended Range Electronic Projectile fired from a smoothbore shotgun.

TPM™ – TACOM™ Power Magazine A battery pack available for use with the X3™ electronic control device. The TPM can communicate wirelessly to other TACOM™ technology-enabled products such as the AXON tactical computer for time synchronization, event triggering and logging, and wireless Trilogy™ Log uploads to the EVIDENCE.COM™ site.

TRAD™ family – TASER® Remote Area Denial System An area denial and facilities security system. The IRAD system is designed to deploy TASER technology against intruders.

TRAD TASERNET™ system A member of the IRAD™ family – TASER® Remote Area Denial System family of area denial systems.

TRAD Shockwave™ security system The full name for the Shockwave™ security system.

training cartridge See LS – live simulation.

training mode A setting for the X3™ electronic control device in which all events and discharges are recorded as training, not operational. The training mode can be combined with either the **manual** or **semi-automatic** operating modes.

trigger button (1) A button pressed to deploy a C2™ electronic control device. (2) A button on a control box pressed to deploy a Shockwave™ security system.

trigger switch An electrical switch pressed to deploy the M26™, X3™, and X26™ electronic control devices. It is analogous to a trigger on a firearm.

Trilogy™ Log Part of the X3™ electronic control device system, the Trilogy Log records information from a variety of sensors into three data logs: the **Event Log**, **Pulse Log**, and **Engineering Log**.

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unibody frame construction A one-piece polymer frame that provides much greater structural integrity and impact survivability than other designs. The **X3™ electronic control device** uses unibody frame construction.

up (ARMED) (1) The safety switch on an **M18L™**, **M26™**, or **X26™** electronic control device is moved upwards to enable it to deploy. This also enables other functions, including the LILs and the laser sight. In this mode, the safety is "off." (2) The **CAM-Lock™ Safety** on an **X3™ electronic control device** is moved upwards to enable it to deploy. This also enables other functions, including the **Focused Beam LED Flashlight system** and laser sights.

up (OPEN) The switch guard on a Shockwave control box is moved to the up (OPEN) position to make the safety switch accessible to the operator.

upper mounting bracket An attachment bracket fitted on a **TRAD Shockwave™ security system** to allow another Shockwave **ECD – electronic control device** to be stacked above it.

volunteer exposure A training or other scenario in which an individual voluntarily receives a TASER deployment.

Warning Arc display A feature of the **X3™ electronic control device** that allows the operator to display arcing as a warning or for a drive-stun without deploying the cartridges.

X3™ electronic control device Introduced in 2009, the first handheld TASER ECD designed to engage more than one target without reloading. The X3 ECD also incorporates other advanced features, including the **ARC Switch – Arc display/Re-energize/Cartridge**, **CPU – Central Processing Unit module**, **EPM™ battery pack – enhanced power magazine**, **Fire Control and Targeting module**, **Focused Beam LED Flashlight system**, **Graphical User Interface**, **High Voltage NMI module**, **Independent Fire Control System**, **RADLS – Range Adjusted Dual Laser System**, **Rotational-Pulse Drive™**, **PCST™ – Pulse Calibration System**, **POC – Power Optimization Control**, **Smart™ Cartridge**, **TPM™ – TACOM™ Power Magazine**, **Trilogy™ Log**, **unibody frame construction**, and **X-Connect™**.

X26™ electronic control device Introduced in 2003, the first TASER ECD featuring the **Shaped Pulse™ technology**.

X26C™ electronic control device The citizen version of the **X26™ electronic control device**. This product is always called the X26C ECD; do not refer to it as the X26 ECD.

X26E™ electronic control device The complete law enforcement designation for the **X26™ electronic control device**. The X26E ECD is often referred to simply as the X26 ECD.

X-Connect™ A technology present in the **Shockwave™ security system** and the **X3™ electronic control device**. The top and bottom probes from any of the active firing bays can form an effective **NMI – Neuro Muscular Incapacitation** circuit, improving effectiveness.

XDPM™ magazine – eXtended DPM A **DPM™ battery pack – digital power magazine** for the **X26™ electronic control device** that provides an extended grip on the handle and a place to store an extra cartridge.

XP™ probe – eXtended Penetration A TASER probe that has a longer dart point to provide more effective clothing penetration and longer range. The term XP also refers to a **TASER® cartridge** equipped with XP probes. TASER International manufactures 25- and 35-foot XP cartridges, called the **XP25** and **XP35**, respectively. TASER International used to offer a special version of the 21-foot cartridge with XP probes called the **XP21**. The XP21 is no longer produced. All XP cartridges are designed for the **ADVANCED TASER® electronic control device** and **X26™ electronic control device** and will not work with the **C2™ Personal Protector** or **X3™ electronic control device**.

XP25™ cartridge A 25-foot **TASER® cartridge**. See **XP™ probe – eXtended Penetration** for more information.

XP35™ cartridge A 35-foot **TASER® cartridge**. See **XP™ probe – eXtended Penetration** for more information.

X-Rail™ mount A TASER accessory designed to attach an **X26™ electronic control device** to a MIL-SID-1913 rail (a.k.a. a Picatinny rail) providing police and military customers the ability to combine TASER technology with their firearms.

XREP™ electronic control device – eXtended Range Electronic Projectile A wireless **ECD – electronic control device** designed to be fired from a 12-gauge shotgun. An XREP cartridge delivers the same **NMI – Neuro Muscular Incapacitation** effect as a **TASER X26™ ECD**, but can be delivered to a distance approaching 100 feet. The XREP cartridge also has a blunt impact effect.

XREP™ engine The electronic payload part of the XREP cartridge that delivers **NMI – Neuro Muscular Incapacitation** from a package that weighs 3.4 grams.

XREP™ live round See **XREP™ electronic control device – eXtended Range Electronic Projectile**.

XREP™ training round A shotgun shell containing a projectile that has no electrical effect and designed to mimic the flight path of an XREP ECD. An XREP training round should never be used on a living target.



**TASER® X3™, X26™, and M26™
ECD Warnings, Instructions, and
Information: Law Enforcement**



IMPORTANT ECD PRODUCT SAFETY AND HEALTH INFORMATION

WARNING

These safety warnings are for your protection as well as the safety of others. Disregarding this information could result in death or serious injury.¹

Complete Training First. Significant differences exist between each of the TASER International, Inc. ("TASER") Electronic Control Device ("ECD") models. Do not Use² or attempt to Use any ECD model unless you have been trained and certified by a Certified TASER Instructor³ on that particular model.

Read and Obey. Read, study, understand, and follow all instructions, warnings, information, training bulletins and TASER training materials⁴ before Using the ADVANCED TASER® M26™ ECD, TASER X3™ ECD, or TASER X26™ ECD. Failure to comply with these instructions, warnings, information, training bulletins, and TASER training materials could result in death or serious injury to the User, force recipient, and others.

Obey Applicable Laws. Use the ECD only in accordance with applicable federal, state, and local laws and other regulations or legal requirements. Your law enforcement agency's Guidance⁵ must also be followed.⁶ Any Use of an ECD must be legally justifiable. Resistance to law enforcement interaction incurs substantial risk of death or serious injury and subjects who resist law enforcement assume all such risks of death or serious injury.



This warning label appears on newer ECD models

These warnings are effective May 1, 2010, and supersede all prior revisions and relevant Training Bulletins. The most current warnings are online at www.TASER.com.

SCOPE AND PURPOSE

This document presents important safety warnings, instructions, and information intended to reasonably minimize hazards associated with ECD deployment, intended Use, side effects, and environment of Use.

Confronting, apprehending, capturing, controlling, restraining, incapacitating, taking persons into custody, and maintaining custody are often high risk events that could result in death or serious injury.

¹ These warnings are state of the art but cannot address all possible ECD application circumstances or permutations. They are intended to inform Users about reasonably foreseeable potential risks of harm. The decision to Use the ECD in a particular manner or circumstance must follow applicable legal standards. These warnings do not create a standard of care. Herein, the singular is also the plural, the plural includes the singular, and the masculine is also the feminine.

² The terms "Use," "Used," "Using," or "User" include, but are not limited to: acquiring; accessing; entrusting; providing; possessing; storing; handling; manipulating; carrying; holstering; drawing; brandishing; displaying; deploying; utilizing; drive-stunning; using alligator or other types of clips or attachments; or discharging an ECD.

³ A Certified TASER Instructor possesses and maintains a current TASER instructor certification for the specific product model they are teaching, demonstrating, or Using and is required to be fully compliant with TASER's most current training requirements and materials.

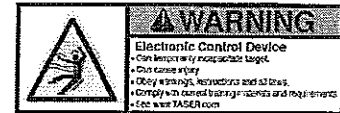
⁴ Current TASER Instructor Training materials may be obtained by contacting TASER's Training Department.

⁵ Law enforcement agencies are force and force tools experts and are solely responsible for their own Guidance. "Guidance" includes, but is not limited to, policy, procedure, rule, order, directive, training, continuum, and standard. TASER has no power or authority to mandate or require Guidance, set policy, require training, or establish standards of care or conduct.

⁶ Law enforcement agencies, government entities, and Users are sophisticated purchasers, sophisticated users, and learned intermediaries with respect to law enforcement weapons (including ECDs), force, force use, legality of force use, and reporting.





**TASER® X3™, X26™, and M26™
ECD Warnings, Instructions, and
Information: Law Enforcement**



When lawfully Used as directed, ECDs are designed in probe-deployment mode to temporarily incapacitate a person from a safer distance than some other force options, while reducing the likelihood of death or serious injury. Any use of force, physical exertion, capture, control, restraint, or incapacitation involves risks that a person may get hurt or die⁷

Within this document certain safety signals and signal words are used to call attention to safety messages:

 The safety alert symbol is used to alert Users to potential injury hazards. ALWAYS Obey all safety messages that follow this symbol to reasonably minimize the risk of death or serious injury when the ECD is Used and to enhance safe operation of the ECD.

 **WARNING** The signal word WARNING indicates a hazardous situation which, if not avoided or heeded, could result in death or serious injury. It is intended to direct the User's attention to hazards that may not be obvious, but may be reasonably mitigated by heeding training and instructions, or avoiding certain actions, circumstances, or behaviors, thereby improving the safety of the ECD. WARNINGS may be followed by instructions and information integral to the WARNING.

SAFETY INFORMATION: ECD DEPLOYMENT AND USE

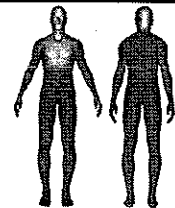


Minimize Repeated, Continuous, or Simultaneous⁸ Exposures. Reasonable efforts should be made to minimize the number of ECD exposures. ECD Users should use the lowest number of ECD exposures that are objectively reasonable to accomplish lawful objectives and should reassess the subject's resistance level before initiating or continuing the exposure.

Control and Restrain Immediately. Begin control and restraint procedures, including restraining the subject during ECD exposure, as soon as reasonably safe and practical to do so in order to minimize total ECD exposure. The ECD User, and those individuals assisting the User, should avoid touching the probes, wires, and the area between the probes to avoid accidental or unintended shock during ECD electrical discharge.



Sensitive Body Part Hazard. When possible, avoid intentionally targeting the ECD on sensitive areas of the body such as the head, throat, chest/breast, or known pre-existing injury areas without legal justification. The preferred target areas are the lower center mass (below chest) for front shots and below the neck area for back shots.



Perform Spark Test Prior to Each Shift. ECDs must be safely spark tested prior to each shift.



Avoid Misuse. Use an ECD only for its intended purpose, in legally justifiable situations, and in accordance with User's agency's Guidance.



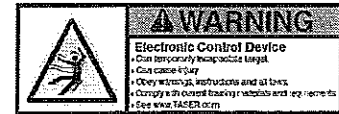
Never Confuse Handgun with ECD. Confusing a handgun with an ECD could result in death or serious injury. ALWAYS follow your agency's equipment carrying and holstering location Guidance and training regarding distinguishing between handguns, other weapons, and ECDs.

⁷ "Almost every use of force, however minute, poses some risk of death." *Garrett v. Athens-Clarke County*, 378 F.3d 1274, 1280, n.12 (11th Cir. 2004).

⁸ "Simultaneous" means delivery to the body of electrical charge by multiple ECDs or multiple completed circuits at the same time.



**TASER® X3™, X26™, and M26™
ECD Warnings, Instructions, and
Information: Law Enforcement**



⚠ WARNING

Be Aware of Trigger-Held Continuous Discharge. If an ECD's trigger is held back it can continue to discharge beyond the 5-second cycle until the trigger is released or the power source is expended.

⚠ WARNING

Be Aware That an ECD or Cartridge May Fail to Fire, Operate, or Be Effective. No weapons system, tool, technique, or ECD is always effective. If an ECD, cartridge, or accessory is inoperable, fails to function, or the intended ECD application is ineffective in achieving the desired effect, consider reloading and redeploying, using other force options, disengaging, or using other alternatives according to agency Guidance. The failure of the ECD to fire, operate, or be effective could result in death or serious injury.

Prepare to Redeploy ECD or Use Backup Plan. Always prepare to redeploy the ECD or Use a backup plan. Be familiar with backup plans and acceptable alternatives in the event of ineffective deployment.

⚠ WARNING

Incapacitation, Falling, and Startle Hazard. ECD Use may cause muscular contraction, Neuro Muscular Incapacitation ("NMI"), startling, and falling, which could result in death or serious injury.

NMI and Secondary Injuries. An ECD may cause NMI if probes are within sufficient proximity to complete a circuit, with sufficient spread, and an adequate circuit is completed and maintained rendering the subject temporarily unable to control movement and may cause a fall. Also, ECD use may cause a startle response. This loss of control or startle may increase risk of death or serious injury resulting from loss of balance, fall, change in momentum, drowning, or loss of control of any mode of transportation, conveyance, or machinery. Especially at risk is a person who:

- could fall and suffer impact injury to the head or other area;
- is on an elevated or unstable surface (e.g., tree, roof, ladder, ledge, balcony, porch, bridge, crane, dock, chair, bunk bed, or stair);
- is less able to catch or protect self in a fall (e.g., restrained, handcuffed, incapacitated, or immobilized);
- could fall on a sharp object (e.g., holding a knife or other edged weapon or sharp object on ground);
- is running, in motion, or moving under momentum;
- is operating or riding in or on any mode of transportation (e.g., vehicle, bus, bicycle, motorcycle, cart, train, or airplane), conveyance (e.g., escalator, moving walkway, elevator, skateboard, skates, or rollerblades), or machinery;
- is located in water, mud, or marsh environment if the ability to move is restricted; or
- is physically infirm, elderly, or pregnant.

⚠ WARNING

Eye Injury Hazard. If a TASER probe, electrode, or electrical discharge contacts or comes into close proximity to an eye it could result in serious injury, including permanent vision loss. DO NOT intentionally aim an ECD at the eye of a person or animal without justification.



LASER light could result in serious eye injury. The ECD uses a LASER as a targeting aid. Avoid intentionally aiming the LASER at the eye of a person or animal without justification. NEVER aim the LASER at aircraft.

⚠ WARNING

Fire and Explosion Hazard. ECD Use could result in a fire or explosion when flammable gases, fumes, vapors, liquids, or materials are present.



**TASER® X3™, X26™, and M26™
ECD Warnings, Instructions, and
Information: Law Enforcement**



An ECD can ignite explosive and flammable clothing or materials, liquids, fumes, gases, or vapors (e.g., gasoline, vapor or gas found in sewer lines or methamphetamine labs, butane-type lighters, or flammable hair gels). Do not knowingly Use an ECD in the presence of any explosive or flammable substance without legal justification. Note that some self-defense sprays use a flammable carrier, such as alcohol.

SAFETY INFORMATION: ECD KNOWN AND POTENTIAL SIDE EFFECTS

WARNING

Always follow and comply with all instructions, warnings, information, and current TASER training materials to reasonably minimize the risks associated with possible Use and side effects listed below.

Muscle Contraction or Strain-Related Injury. ECDs can cause strong or moderate muscle contractions that may result in physical exertion, athletic, or sport-type injury, including, but not limited to, injury such as hernia, rupture, dislocation, tear, or other injury to soft tissue, organ, muscle, tendon, ligament, nerve, bone, or joint. Fracture to bone, including compression fracture to vertebrae, may occur. These injuries may be more serious and more likely to occur in people with pre-existing injuries, conditions or special susceptibilities, which include but are not limited to, known or unknown: pregnancy; osteopenia; osteoporosis; spinal injury; or previous muscle, disc, ligament, joint, bone, or tendon damage or surgery. Such injuries may also occur when a person reacts to the ECD deployment or discharge by making a rapid movement.

Physiologic or Metabolic Effects. The ECD can produce physiologic or metabolic effects which include, but are not limited to, changes in: acidosis; adrenergic states; blood pressure; calcium, creatine kinase ("CK"); electrolytes (including potassium), heart rate and rhythm; lactic acid; myoglobin; pH; respiration; stress hormones or other biochemical neuromodulators (e.g., catecholamines). Reasonable effort should be made to minimize the number of ECD exposures and resulting physiologic and metabolic effects. In human studies of electrical discharge from a single ECD of up to 15 seconds, these effects on acidosis, CK, electrolytes, stress hormones, and vital signs have been comparable to or less than changes expected from physical exertion similar to struggling, resistance, fighting, fleeing, or from the application of some other force tools or techniques. Adverse physiologic or metabolic effects may increase risk of death or serious injury.

Higher Risk Populations. ECD Use on a pregnant, infirm, elderly, small child, or low body-mass index (BMI) person could increase the risk of death or serious injury. ECD Use has not been scientifically tested on these populations. The ECD should not be Used on members of these populations unless the situation justifies possible higher risk of death or serious injury.

Physiologically or Metabolically Compromised Persons. Law enforcement personnel are called upon to deal with individuals in crises that are often physiologically or metabolically compromised and may be susceptible to arrest-related death ("ARD"). The factors that may increase susceptibility for an ARD have not been fully characterized but may include: a hypersympathetic state, autonomic dysregulation, capture myopathy, hyperthermia, altered electrolytes, severe acidosis, cardiac arrest, drug or alcohol effects (toxic withdrawal, sensitization to arrhythmias, etc), alterations in brain function (agitated or excited delirium), cardiac disease, pulmonary disease, sickle cell disease, and other pathologic conditions. These risks may exist prior to, during, or after law enforcement intervention or ECD Use, and the subject may already be at risk of death or serious injury as a result of pre-existing conditions, individual susceptibility, or other factors. In a physiologically or metabolically compromised person any physiologic or metabolic change may cause or contribute to death or serious injury. Follow your agency's Guidance when dealing with physiologically or metabolically compromised persons.

Neurocardiogenic Response (Fainting). A person may experience an exaggerated response to an ECD exposure, or threatened exposure, which may result in a person fainting or falling with possible secondary injury.

Seizure. Repetitive stimuli (e.g., flashing light or electrical stimuli) can induce seizure in some people. This risk may be increased in a person with a seizure history or if electrical stimuli pass through the head area. This may also result in a person falling with a possible secondary injury.



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ECD Warnings, Instructions, and
Information: Law Enforcement**



Stress and Pain. The ECD can cause temporary discomfort, pain, stress, panic, or startle which may be injurious to some people. Anticipation of ECD exposure can cause stress, trepidation, panic, startle, or fear, which may also be injurious to some people.

SAFETY INFORMATION: PROBE OR ELECTRODE INJURY OR INFECTION

WARNING

Probe or Electrode Injury or Infection Hazard. ECD Use may cause a mark, burn, scar, penetration, other skin, or tissue damage or infection. Provide First Aid and medical care as needed.

Scarring. Use of an ECD may cause irritation, puncture, mark, abrasion, rash, burn, keloid, or other scarring that may be permanent. This risk may be increased when using the M26 or X26 ECD in drive-stun mode with the cartridge removed or the X3 ECD in drive-stun mode due to the multiple sets of electrical contacts. The nature and severity of these effects depends on the area of exposure and method of application, individual susceptibility, and other circumstances surrounding ECD Use, exposure, and after care.

Penetration Injury. The TASER probe has a small dart point which may cause a penetration injury to a blood vessel or internal organ (including lung, bone, or nerve). The probe or dart point (which may detach) can also puncture or become embedded into a bone, organ, or tissue, which may require immediate medical attention, surgical removal, or may result in scarring, infection, or other serious injury.

Penetration Injury Care. Injury due to penetration of the probe or dart point into a blood vessel, organ, nerve, or bone may require medical attention. A probe, dart point, or barb embedded in a sensitive area such as the eye, the genital area, breast, neck, throat, or vascular structure may cause serious injury and may require special medical attention and further evaluation.

Probe Removal. Probe removal may cause injury. Leaving a probe in the body may result in pain or injury. Follow your agency's Guidance and biohazard protocols for probe removal. In the case of embedment, organ or bone penetration, or probe, dart point, or barb detachment, immediate medical attention and possible surgical removal may be required.

Skin, Wound, or Infection Treatment. ECD Use may cause a skin irritation, puncture wound, abrasion, mark, rash, burn, keloid or other scar which may require medical attention and may be permanent. As with any injury of this type, infection or tetanus and resulting complications may occur in some circumstances.

Biohazards. Utilize appropriate biohazard protocols and personal protective equipment including Body Substance Isolation procedures, gloves, masks, and washing of hands and exposed areas as necessary. Follow your agency's Guidance and appropriate biohazard, waste, and evidence protocols when dealing with biohazards.

Untethered Discharged Probe. In probe deployment, it is possible that a discharged probe that does not impact a subject or target may become untethered from the wire and travel a significant distance. A loose, untethered probe can cause serious injury.

SAFETY INFORMATION: GENERAL PRECAUTIONS

WARNING

Unintentional Deployment Hazard. Unintentional ECD activation could result in death or serious injury to the User, force recipient, and others. Follow and comply with the following instructions to reduce the risk of unintentional Use, deployment, or activation.

Store in a Secure Location. Store ECDs, cartridges, and accessories in secure locations inaccessible to children and other unauthorized persons to prevent inappropriate Use, which may result in death or serious injury to the User, other persons, or animals. ECDs and cartridges are weapons and are not toys.

Use of ECD Safety. Always place the ECD safety switch in the down (SAFE) position when not in Use. Remember to place the ECD safety switch in the up (ARMED) position when you intend to Use the ECD.



**TASER® X3™, X26™, and M26™
ECD Warnings, Instructions, and
Information: Law Enforcement**



Assume ECD is Loaded. Always assume that an ECD is loaded and capable of discharging. To avoid unexpected discharge, ensure that no live cartridge is in the ECD when inserting: a battery; CDPM™, DPM™, EPM™, TPM™, or XDPM™ battery pack; TASER CAM™ recorder; or while performing spark tests (except when spark testing the X3 ECD), maintenance, data downloading, or battery charging.

Be Aware of ECD Deployment Mode. Keep your finger off the trigger until it is legally justifiable to use the ECD. Be aware of the deployment mode (manual or semi-automatic) set on the X3 ECD before discharging that ECD.

Keep Body Parts away from Front of ECD or Cartridge. Keep your hands and body parts away from the front of the ECD and cartridge, unless instructed otherwise. A discharging ECD or cartridge could result in serious injury.

Avoid Static Electricity. Keep the cartridge away from sources of static electricity. Static electricity can cause the ECD or X26 or M26 cartridge to discharge unexpectedly, which could result in serious injury.

Beware of Electronic Equipment Interference. Interference from electronic transmission equipment in close proximity to the ECD could interfere with the proper operation of the ECD and cause the ECD to discharge. Keep the ECD at least several inches away from other electronic equipment. Place the ECD safety switch in the down (SAFE) position whenever it is immediately adjacent to electronic equipment (including transmitting radios and cell phones). Remember to place the ECD safety switch in the up (ARMED) position prior to attempting Use

Avoid Dropping ECD or Cartridge. If an ECD or cartridge is dropped or damaged it may unintentionally deploy or discharge, become inoperable, or fail to function, making it unsafe for continued use. If an ECD or cartridge has been dropped or damaged, refer to the procedure recommended in the current version of the TASER Instructor Training materials.

SAFETY INFORMATION: MAINTENANCE

WARNING

Failure to maintain an ECD as instructed may cause the ECD to malfunction or fail to function optimally and could result in death or serious injury. Follow and comply with the following instructions to reduce the risk of ECD malfunction, including failure.

Damaged ECD or Cartridge. Do not use a cartridge with a missing blast door unless facing an immediate threat. ECD repair or modification by an unauthorized person may cause the ECD to fire or malfunction, will void the warranty, and may put the User or other person at risk of death or serious injury.

Update ECD Software. Some ECDs, including the TASER X26 and X3, have the capability for software updating. It is important to acquire, update, and maintain the latest ECD software update. Current ECD software may be obtained by contacting TASER's Customer Service Department or following instructions at the EVIDENCE.COM™ site.

Use Only TASER-Approved Components, Batteries, Accessories, and Cartridges. The ECD is a sophisticated electronic system. In order to provide proper function, only TASER-approved components, batteries, accessories, and cartridges are to be used with the ECD. Use of anything other than TASER-approved components, batteries, accessories, and cartridges will void the warranty, may cause malfunction, and may put the User or other person at risk of death or serious injury.

Avoid Exposure to Wet Conditions. If the ECD is drenched or immersed in water or other liquid, DO NOT Use the ECD until completing the procedure recommended in the current version of the TASER Instructor Training materials.

SAFETY INFORMATION: HAZARDOUS SUBSTANCES

WARNING

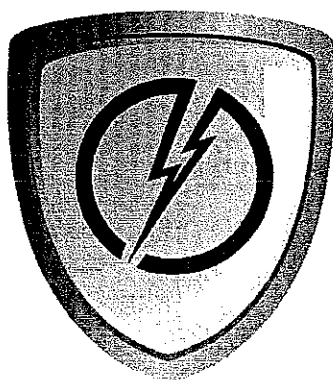
Hazardous Substances. The ECD contains components that contain chemicals known to the State of California and others to cause cancer and birth defects or other reproductive harm. Do not disassemble. Refer to your agency's Guidance for proper handling and disposal.

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Module 1

Introduction to TASER Training



P r o t e c t L i f e

Instructor Certification Course * TASER® X26™ Electronic Control Device

Version 17 Released May 2010

**PRIOR TO BEGINNING THE CLASS,
EVERY STUDENT MUST FULLY READ,
UNDERSTAND, AND AGREE TO:**

Slide 2

- THE TASER SAFETY RULES
- SIGN THE LIABILITY RELEASE FORM

Instructor Notes: The Liability Release form MUST be signed by all students before instruction begins. Signing the Liability Release form does not indicate that the student volunteers to be exposed to the TASER Electronic Control Device, or ECD. All students must sign the Liability Release form whether they are going to volunteer to be exposed to the TASER ECD or not. Students who fail to sign the Liability Release form will not be permitted to participate in any training drills or physical activities, and therefore will not be certified as an instructor.

License Agreement

Slide 3

- All TASER training material:
 - Is copyrighted
 - May be used for Electronic Control Device (ECD) training only
 - May not be used for commercial purpose or monetary gain
 - Must be used in its entirety
- Read entire TASER Training Material License Agreement in the instructor manual and on the TASERtraining DVD

Instructor Notes: All TASER training material is copyrighted. Instructors may use and modify the TASER ECD training materials for the purpose of developing their own ECD training program and for no other purpose. Using the TASER training materials for commercial purpose or for monetary gain is prohibited. You must use all materials from the TASER ECD training materials that cover ECD operation, safety and warnings as they appear in the TASER ECD training materials. However, you may add additional information to the TASER ECD training materials as part of the instruction of your own personnel and in developing your own ECD training program. Be sure you read the entire TASER ECD Training Material License Agreement located in the instructor manual and on the TASER training DVD.

Version 17

Slide 4

- With the release of Version 17, all prior TASER training materials and training bulletins are considered obsolete and should not be used
- The contents of this course must be considered and understood as a whole
- Archive prior versions of training materials and replace with Version 17

Instructor Notes: No particular portion, statement or content should be considered individually and out of context without fully and completely considering the entire program.

Disclaimer

Slide 5

- TASER does not establish, recommend, or endorse any use of force procedures, policies, or tactics. TASER training materials may include videos or other information from outside sources which are utilized for illustrative purposes only to depict certain concepts or to facilitate discussions.
- TASER does not recommend or endorse any of the procedures, techniques, tactics, or methods depicted or illustrated in these materials and disclaims any liability for any such practices.

Use of Training Video

Slide 6

- Videos in this presentation have training value
- Review introductory slides and instructor notes for each video
- Emphasize learning points
- Discuss positive and negative points
- Encourage open discussion

Instructor Notes: All videos in this presentation have training value. Many videos are preceded by an introductory slide that lists several learning points. Be sure you review these introductory slides with your class prior to watching the videos. The videos demonstrate both successful and unsuccessful ECD uses. Some students may disagree with depicted tactics or force option choices. Encourage open discussion among the students on these issues. Consensus is not expected. The point is to get students to share ideas on best practices in use of force situations. Be sure that your students understand that by showing these videos, TASER is not endorsing the tactics depicted or even suggesting that they are appropriate.

Instructor Manual Contents

Slide 7

- Explanation of Changes
- Course Outline
- DVD Instructions
- Warnings and Cautions
- Lesson Plan
- Volunteer Exposure Guidelines
- Drills and Scenarios

Instructor Notes: On the TASER Training DVD, you will find PowerPoint presentations for the Instructor course and mandatory user courses that must be presented in their entirety and only modified for addition of department policies and procedures. There is also an Instructor folder which contains an instructor guide with helpful information for setting up and presenting a TASER ECD course.

The DVD contains several additional folders including user courses for all TASER ECDs, an M26 folder with M26 instructor and user courses, a Training Documents folder, a Test folder that includes the tests and answer keys for the instructor and user courses, a Support Materials folder that contains information that will be helpful in running an ECD program, and a video folder that contains all the videos contained in the courses.

The instructor manual contains an explanation of changes from the previous version, course outline, DVD instructions, warnings and cautions, a lesson plan, volunteer exposure guidelines, and drills and scenarios.

Expectations

Slide 8

- NO FIREARMS in the classroom
- Please silence cell phones and pagers
- Please adhere to scheduled break times
- You must successfully complete the entire curriculum to be certified as a TASER instructor
- Ask questions. If we don't know the answer we'll find it for you.

Instructor Notes: The "no firearm rule" shall be strictly enforced. This is a critical safety issue because the course is interactive and includes handling live TASER ECD's and simulated firearms under stress-induced situations. Students before each drill or scenario. If a student refuses to secure their firearm outside of the training area, they will be excused from the training and directed to leave.

All students must attend the entire course and successfully complete all tests, drills, and scenarios to be certified as a TASER instructor.

If you have any questions at all, please ask the Master Instructor. If they don't have the answer, they have access to resources that will probably be able to give them the answer before the end of the class.

Goal

Slide 9

To provide the theory and practical training necessary to effectively instruct users to reasonably safely and effectively operate the TASER X26, Electronic Control Device (ECD).

Safety Rules

Slide 10

- The safety switch of all TASER ECDs will remain in the down (SAFE) position unless the instructor directs students to arm the ECD or when it is appropriate to do so during a training drill or scenario
- TASER ECDs shall not be pointed at any person unless the instructor directs students to do so as part of a training exercise or when it is appropriate to do so during a training scenario

Instructor Notes: Remember, the safety switch of all TASER ECDs will remain in the down (SAFE) position unless the instructor directs students to arm the ECD or when it is appropriate to do so during a training drill or scenario TASER ECDs shall not be pointed at any person unless the instructor directs students to do so as part of a training exercise or when it is appropriate to do so during a training scenario.

Slide 11

- A TASER ECD loaded with a live cartridge must not be pointed at another person except during a scenario exercise when the cartridge is an LS (blue) training cartridge and the subject being aimed at is wearing a protective simulation suit or during voluntary exposures
- XREP rounds, live and training, must not be fired at another person during training
- LASERs must not be shined into eyes
- Probes will be removed according to proper protocol

Instructor Notes: Students should not be given live cartridges until they need them for firing drills or scenarios. All reloading and other drills should be performed with expended cartridges. Instructors are encouraged to maintain a supply of expended cartridges for training purposes.

Safety Rules

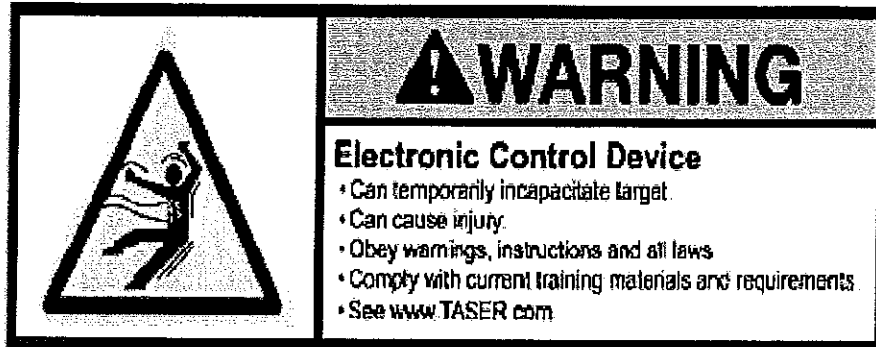
Slide 12

- No live firearms other than the X12 and other shotguns approved by the Master Instructor will be brought into the training area
- All activity will stop when any student or instructor calls, "Stop action!"
- Every participant is a safety officer. All unsafe conditions will be immediately brought to the attention of the instructor. If an unsafe condition occurs or is noticed during an exercise, the student or instructor observing the unsafe condition will call, "Stop action!"

Instructor Notes: The Instructor will direct students to secure all firearms outside of the training area prior to the start of instruction. This warning should be repeated at the beginning of each training day, after lunch breaks, any time a student leaves the training area and returns, and prior to all exercises.

TASER ECDs Are Not Risk Free

Slide 13



At this time, review all current TASER Warnings contained in the instructor manual

Instructor Notes: The Law Enforcement Warnings are contained in the instructor manual, the DVD, and at TASER.com. Check the website frequently to ensure you have the most current copy of the warnings.

Share Materials & Research

Slide 14

- Share product and training manuals with all users
- Carefully review and research product manual and additional DVD materials
- Share information and encourage all users to read and study materials
- Recommend all TASER ECD users conduct their own research, analysis and evaluation
- Important to timely review all materials, updates, training bulletins, etc.

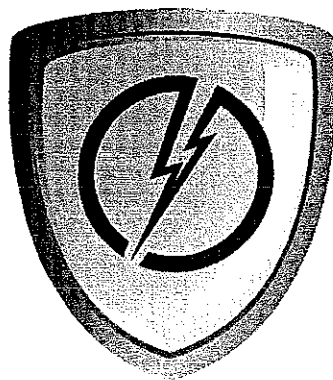
Instructor Notes: Be sure you copy all the most current TASER Warnings and hand them out to all your students for their review prior to proceeding with the training. The most current warnings are located on TASER's website at www.TASER.com. Also share the product and training manuals with all end users. Review all the materials on the training DVD that you will receive during the classroom portion of this course. Be sure that you frequently, and always within 72 hours of teaching any TASER courses, check the TASER website for training bulletins and to ensure you are using the most current version of the training materials.

This concludes the introductory module. Good luck.

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Module 2

Technology and History



P r o t e c t L i f e

Instructor Certification Course * TASER® X26™ Electronic Control Device

Version 17 Released May 2010

Our Mission: Protect Life

Slide 1

2

Module 2: Technology and History

At TASER International, our mission is to Protect Life. Over the course of human history, we have created ever more deadly weapons, finding ever more efficient ways to kill our fellow man. Security is one of our most basic needs – both as individuals and as a society. Yet, the tools of one man's security can become the threat to another's. We envision a future where technology can offer safer options to protect ourselves and our communities while minimizing the risk of death or serious injury. Over the past decade, we have begun to realize our mission, with over 14,000 law enforcement agencies in over 40 countries now using Electronic Control Devices, or ECD's to protect life and reduce injuries.

What is Electricity?

Slide 2

Before we review the history and state-of-the-art in ECD's, we need to first lay a foundation of our core technology – which relies on the phenomenon of electricity. Electricity is a flow of energy, or more specifically a flow of electric charge within a conductor. That conductor can be a copper wire, or it can be the human body.

To help us understand electricity, it is helpful to think of a visual model that we all experience in our daily lives – such as the flow of water. Much like water flows through a pipe, electrons flow through a wire. When we measure electricity, there are two key measures – Voltage, measured in Volts, and Current, measured in Amperes.

Electricity is the flow of electrons through a conductor



	Unit	"Water Analogy"	"Water Unit"
Voltage (V)	Volt	Pressure	lbs / in ²
Current (I)	Ampere	Flow Rate	Gal / Second

Voltage, which is also called Electro-Motive Force, is similar to the pressure in a water hose. The voltage provides the "pressure" to push an electric current through the wire.

Current is the measure of the actual flow of electricity – how many electrons are actually flowing through the wire.

In our analogy to flowing water, voltage is like pressure, measured in pounds per square inch. Current is the flow rate, similar to gallons per second in our water analogy.

When we think about electricity, the first term to come to mind is usually "volts." This is because our electric power grid is a fixed voltage system, and is rated in volts.

However, when we talk about electric safety, the current in amperes is much more critical than voltage. For example, in this photo a mother and daughter are exposed to millions of volts from a special device [a Van de Graff Generator] at a science museum. Because of the way this equipment is designed, there is almost no current. So, as you can see, the "pressure" from the voltage seems to push electric charge right out to the end of their hair, making it stand on end. Yet, because negligible current is flowing, they experience no ill effects from electricity.

Slide 3



Ferg 1456

Slide 4

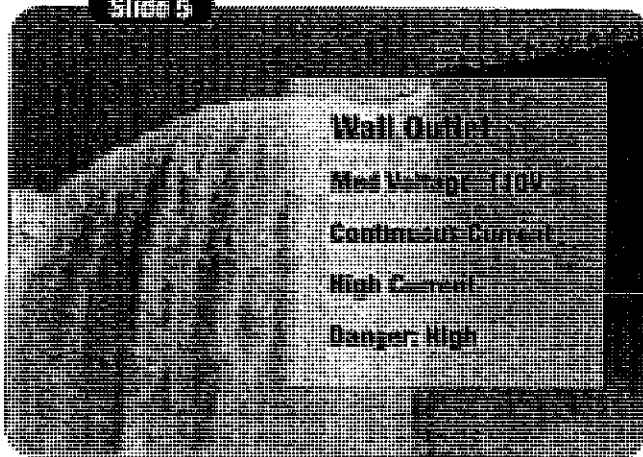
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Module 2: Technology and History

So, if voltage is not the key factor in making an electrical stimulation effective, why does the TASER ECD have a high peak voltage?

Instructor Notes: The answer is that we use the high voltage to allow the electricity to arc through clothing to get to the subject's body. Without a high voltage to generate the arc, we would have to use longer needles on our probes and heavier projectiles to ensure the probes make contact with the body. By using a high-voltage pulse, we don't have to make the probes as long – as long as the probes are close to the body, the NMI pulse can arc across air gaps to complete the circuit. Including the tip of the probe and the electric arc, TASER devices can penetrate about 2 inches of total clothing gaps.

Slide 5



By way of our analogy, let's compare a waterfall to rainfall. The pressure or voltage behind each droplet of water in the waterfall is actually a lot less than for each rain drop – because the rain drop is falling from a much greater height. So, the "voltage" of this waterfall is much less than for rain. However, the rate of flow or "current" for the waterfall is much, much higher than for the rain, which falls in small droplets separated in space and time compared to the continuous flow of the waterfall. Standing under the waterfall would certainly be a very dangerous place to be – much more so than in the rain. Similarly, being exposed to a high current electrical current – like the one out of your wall outlet, can be very dangerous, even at moderate voltages like 110 volts. Exposure to high voltage, low current shocks – such as a static discharge on a dry day, is far less dangerous. Static shocks regularly exceed 30,000 volts, yet they deliver very low amounts of electric charge, and there has never been a reported injury directly from the effects of a static shock, although I'm sure there have been some secondary injuries from people who were surprised and may have fallen, etc.

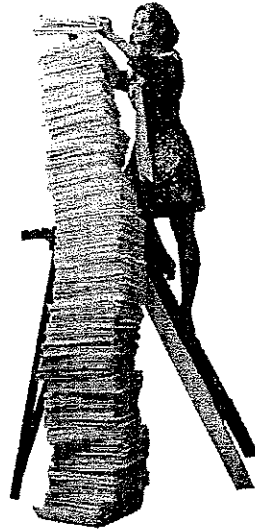
The rainfall analogy is a very good one for a TASER ECD discharge. The drops of rain are separated by time and space such that the actual "current" or flow of water down from the sky is quite small.

How Short is a TASER Pulse?

Slide 6

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Module 2: Technology and History



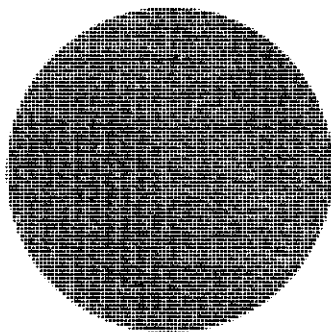
If an 8 Ft Stack of Paper
= 1 Second of Time

TASER Pulse
= Single Sheet

Similarly, the current from the TASER ECD comes in small bursts that are separated in time such that the actual flow of charge over time is quite low. To illustrate this, if we considered one second in time to be represented by a stack of standard copier paper 8 feet tall, the duration of a TASER pulse would be equal to only the thickness of a single sheet of paper – less than one ten-thousandth of a second. These TASER pulses repeat 19 times per second, so you could think of the period of time when the TASER current is actually flowing as a single piece of colored paper inserted about every 5 inches in the stack – just 19 sheets out of this 8 foot tall stack of paper.

TASER: Low Average Current

Slide 7



110 V Wall Outlet: 16 Amps



Christmas Tree Bulb: 1 Amp

TASER Output: 0.0036 Amp

The effect of electricity in stimulating a response in excitable tissues is primarily related to the amount of charge delivered. With water, how wet you get depends on how much water gets on you. With electricity, the effects are related to how much electric charge gets into your body.

Because of its pulsed nature, including extremely short pulses, the average current from a TASER ECD is less than 0.004 amperes – that's a fraction of the more than 15 amperes that can be generated from a standard wall outlet.

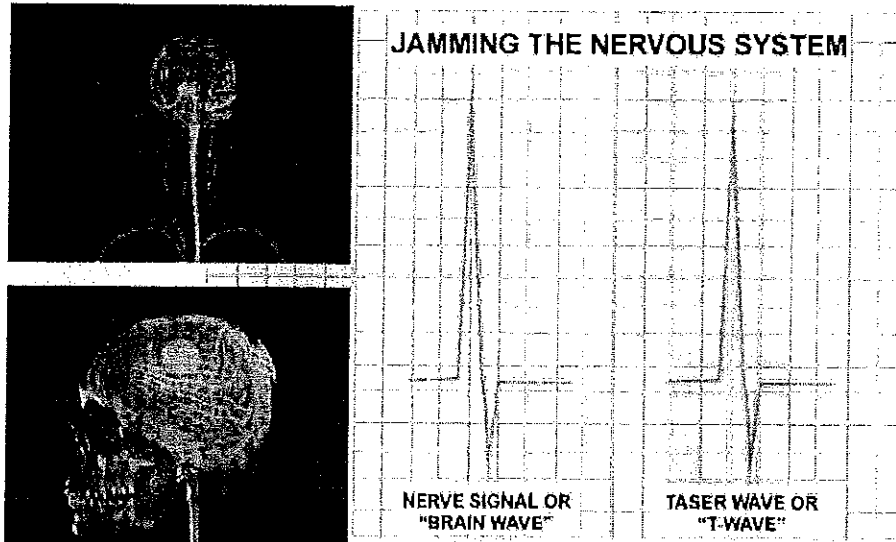
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Technology

2

Module 2: Technology and History

Slide 8

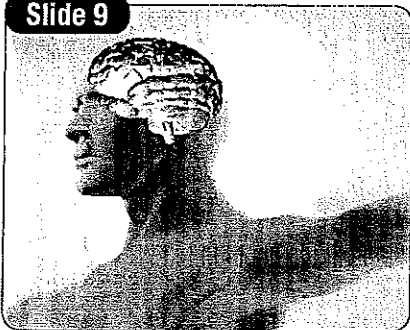


So, this naturally begs the question – if the TASER ECD output current is so low, how can it be effective in stopping a violent subject?

The answer is because the TASER ECD current does not rely on brute force, or on sheer power. Instead, the TASER ECD pulsed output is really an elegant approach to incapacitating violent persons. The TASER ECD pulses mimic the electrical signals used within the human body to communicate between the brain and the muscles. The TASER ECD simulates the pulsed communications used within the nerves, and interferes with communication – like static on the telephone lines within the body.

Sometimes people will ask “Isn’t electricity dangerous?” The answer is – well yes, it can be. But electricity is actually necessary for life – we literally cannot live without it.

Slide 9



Electrical pulses control every thought we have, every breath we take, every sensation we feel, every sight we see, every sound we hear – every complex life process depends on these electrical signals within our bodies that occur billions of times every second.

The brain is like an incredibly complex conductor, leading a string section of incomprehensible complexity. As the brain uses electrical “pings” to stimulate the nerves in a complex and highly coordinated fashion, consciousness emerges and neuromuscular control becomes possible.

TASER ECDs are designed to use similar electrical impulses to temporarily overwhelm the symphony of neural communications that are required for a person to perform coordinated action.

Slide 10

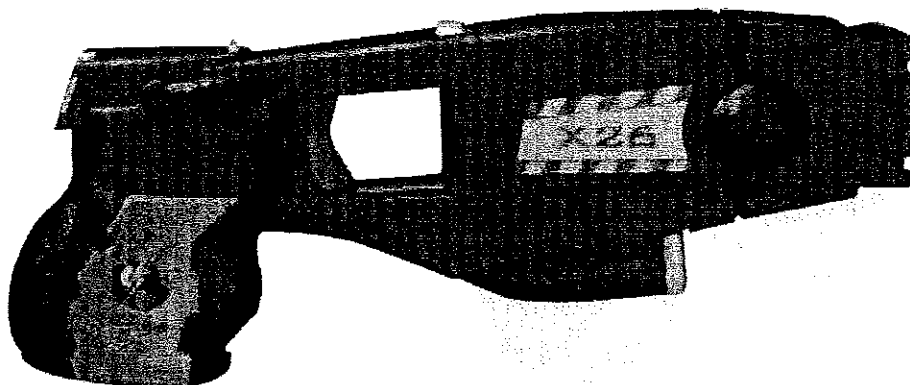


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Slide 11

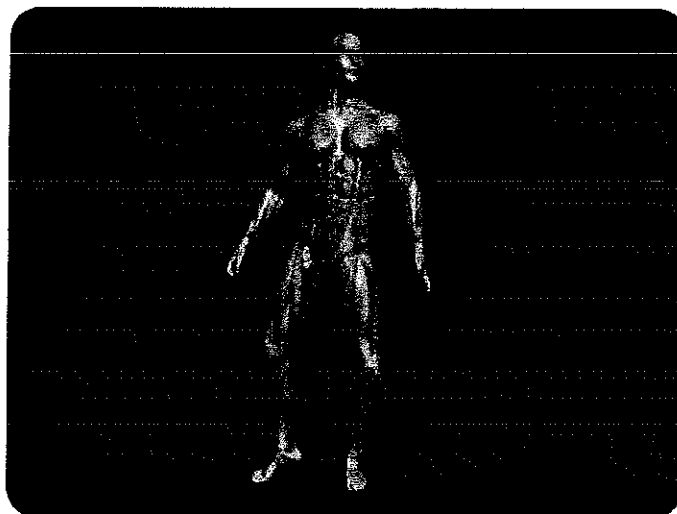
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Module 2: Technology and History



The probes fired from a TASER ECD carry fine wires that connect to the target and deliver the TASER pulses into his neural network. These TASER pulses overwhelm the normal nerve traffic, causing involuntary muscle contractions and impairment of motor skills.

Slide 12



Aim at the larger muscle groups of the body, particularly the large muscles of the back (an area where there are many large nerve trunks as well). When aiming at the front of the body, it is more effective to get at least one of the probes below the belt line into the large muscles of the pelvic triangle and legs.

TASER Inventor, Jack Cover



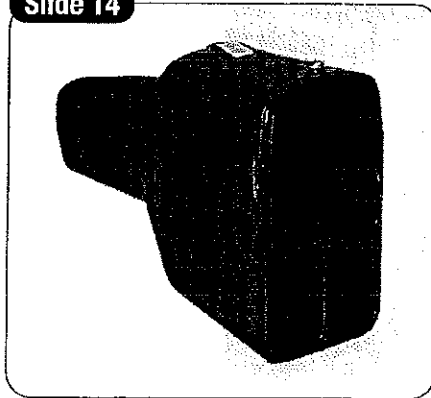
TASER technology was invented in the 1960's by Jack Cover. In the early 1960's, Jack was the lead scientist at North American Aerospace working on the Apollo Moon Landing Project.

Growing up during the Great Depression, Jack read a series of books about a fictional character named Tom Swift. One of his favorite books: Tom Swift and his Electric Rifle.

Inspired by a call from President Johnson's commission on violent crime for the country to develop effective non-lethal weapons, Jack set out to create a non-lethal weapon that could use electricity to immobilize, but without causing long lasting harm. The result was a device he named after his boyhood hero – the Thomas A. Swift Electric Rifle, or TASER. Unfortunately, Jack passed away in early 2009 after a long, brave fight with Alzheimer's Disease. But his life's work would well outlive his own life.

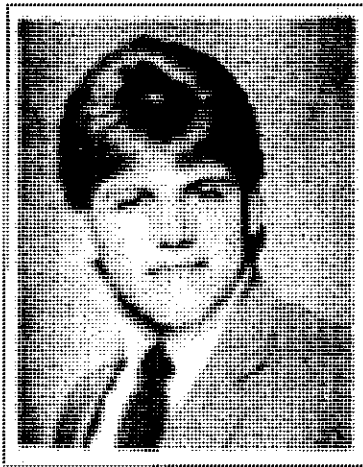
1976: TASER TF-76

Slide 14



The first version of the TASER weapon was called the TF-76. By today's standards, it was a bit clunky, but it became the world's first Electronic Control Device.

Unfortunately, the TF-76 used gunpowder to propel the darts – which makes it classified as a firearm. Yet, it was designed to look like a flashlight. In the United States, it is not generally legal to sell a firearm disguised as a flashlight. So, amidst the regulatory challenges, the company went under and never really recovered.



Todd Bogers



Corey Holmes

Slide 15

2

Module 2: Technology and History

Tom and I got involved with TASER in the early 1990's. I had gone away to an exchange program in Belgium, but back here in Scottsdale, two of my high school football team mates were shot and killed in a brutal road rage incident.

After this incident, I became more and more interested in the topic of self-defense and firearms. I wondered why it was that the state-of-the-art in self-defense was still based on firing small metal projectiles at people. Wars were fought hundreds of years ago with this same fundamental technology – and it seemed to me that while technology had revolutionized medicine, transportation, communication and just about every other field, technology for self-defense was way behind the curve.

Some of my undergraduate training was in Neurobiology, so I became interested in the TASER – which I had seen in various motion pictures and newspaper stories. I started doing research into the history of the TASER when I learned of the regulatory problems that hit the company during the 1970's because of the device being classified as a title 2 firearm.

One day I was doing some patent research when I discovered the inventor of the TASER lived in Tucson, Arizona, just an hour and a half from where my parents lived. So, I called him up to learn more about why the TASER had not been more widely adopted. He invited me down to visit his home so he could give me the full history.

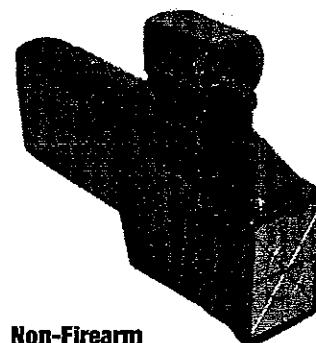
At the time, Jack was 73 and I was 23. He was retired, looking for who would continue his life's work. I was just out of school looking for what to do with my life. It was a natural fit – we just hit it off. So, we ended up starting a company together in his garage in Tucson to give TASER Technology another chance.

Our initial focus was to develop a TASER ECD that would be compliant with the Federal Firearms Regulations. To do this, we decided to use a compressed air propellant rather than an explosive propellant. Once we received the ATF approvals, we began full scale development of the AIR TASER model 34000, which we launched in December of 1994.

1993: AIR TASER

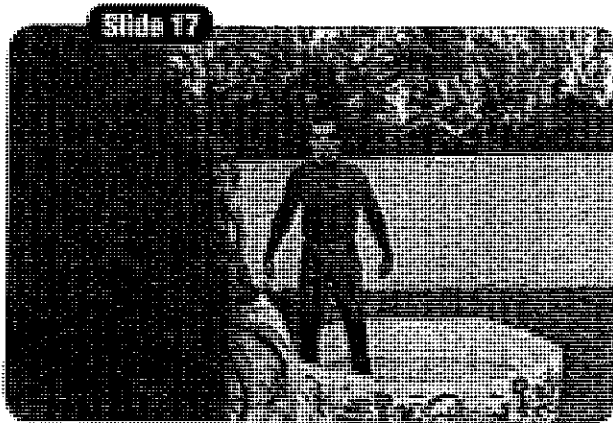
The AIR TASER was initially targeted at the consumer market. Given that over 30,000 people die from bullet wounds in the U.S. every year, we wanted to offer an alternative to allow people to protect themselves, yet also de-escalate so they wouldn't have to take a human life in the process.

Slide 16



Non-Firearm

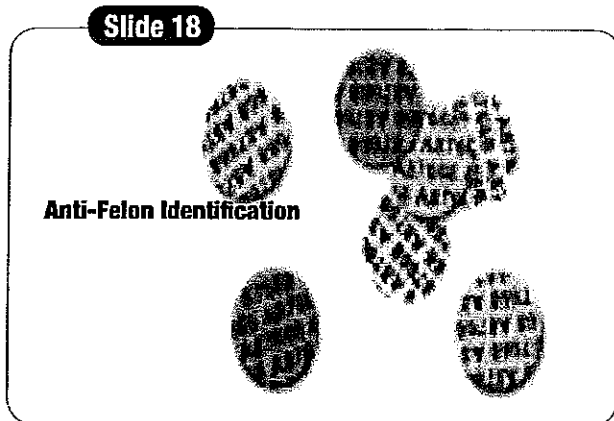
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Tom and I were the first two people to be hit with the new AIR TASER. Tom drew the short straw, so he had to go first. However, in order to show that the ECD could be safe to use in wet environments, I took my first hit standing in a wading pool of water.

Because the TASER darts are designed to penetrate the skin of the body, it doesn't really matter if it's wet outside because the TASER darts can connect directly to the salt-water soaked tissues beneath the skin.

1993: AFID



When we introduced the AIR TASER, we also wanted to introduce new ways to use technology to prevent people from misusing our products. So, we developed the AFID, or Anti-Felon Identification, system. With AFID, we load small serial numbered confetti-like tags in every cartridge. That way, when someone fires the device, it sprays the area with confetti printed with the cartridge serial number. There are far too many to try to pick up quickly, so you've just left behind a calling card. If you have used the TASER

ECD to defend yourself, police can use the AFID's to verify your police report – and we'll send you a replacement system for free if you left it behind. If you just committed a crime with a TASER ECD, well the police can now use the serial numbered tags to track down the registered owner for a chat.

NOTE: TASER's lifetime replacement guarantee is available only to consumers in the United States who provide a police report to TASER.

Evolution of TASER

Slide 19

After we launched the AIR TASER, we learned there was a second major problem with ECDs in addition to the regulatory problems of the '70's.... They just weren't as effective as they should be against motivated subjects.

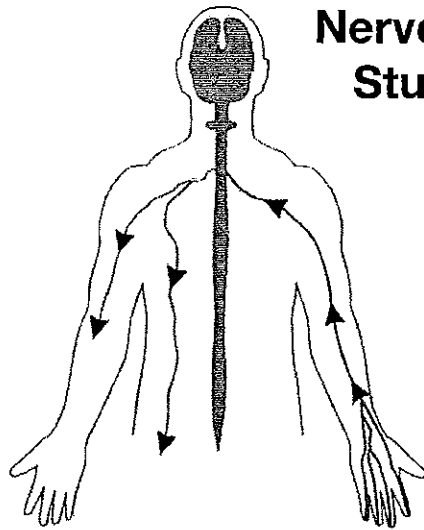
In demonstrations, we found that motivated people could fight through the effects of the early ECDs. So, we focused on developing an advanced technology, called NMI for Neuro-Muscular Incapacitation that was designed to over-ride muscular control and incapacitate even the toughest subjects, or people under the influence of drugs that dulled their pain response.

In this video, the subject is attached to an original TASER TF-model. Note how he is able to fight through the pain. This second subject is subjected to the AIR TASER 34000, with the same results.

Now watch this next subject, who we hit with our first NMI system, the ADVANCED TASER M26. Note the different reaction – the device is over-riding muscle control and he falls to the ground.

Next we'll look at the TASER X26, with an even more refined NMI technology. Remember this first volunteer who fought through the old TASER? Look at the response now – this is NOT based on pain, the ECD has taken over control of his major muscle groups. Look at how rigid his body has become. There's nothing he can do to resist the effect. But also, look at how fast he recovers – right back up after the exposure.

Remember this volunteer? He fought right through the old model 34000, but look at the effect from the X26.



Nervous System Stun vs. NMI

Slide 20

- * **Central Nervous System**
Command center
- * **Sensory Nervous System**
Stun systems effect these nerves
- * **Motor Nervous System**
NMI systems affect BOTH the sensory and motor nerves

Taser effects

The advance from the earlier "Stun" ECDs to Neuro Muscular Incapacitation was the key breakthrough that lead to the global adoption of ECDs. To understand the difference, let's talk briefly about the human nervous system. We can break the nervous system down into three main elements.

The Central Nervous System, including the brain and spinal cord, is the command center – it's where information is processed, decisions are made, and information is stored.

The Sensory Nervous System consists of the nerves that connect the sensors of the body – the eyes, ears, skin, etc. to the brain. Early Stun ECDs primarily affected the sensory nervous system. We know this because you can feel their effect, causing disorienting sensations – but they don't stop truly motivated subjects.

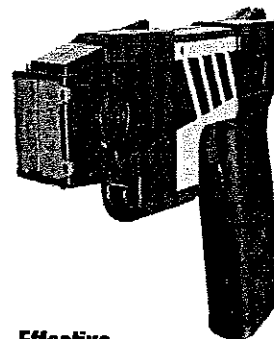
The Motor Nervous System consists of the nerves that go out from the spinal cord and connect to the muscles, controlling muscle movements. These are the nerves we really want to control to stop aggressive subjects – and that's exactly how NMI systems work – they stimulate these motor nerves causing uncontrollable muscle contractions that inhibit the subject from being able to perform coordinated movement.

1999: TASER M26

The fist ECD to use this new NMI technology was the ADVANCED TASER M26, introduced in 1999.

The M26 was a huge success, because – for the first time, law enforcement had a system that could incapacitate the most violent and dangerous subjects.

Slide 21

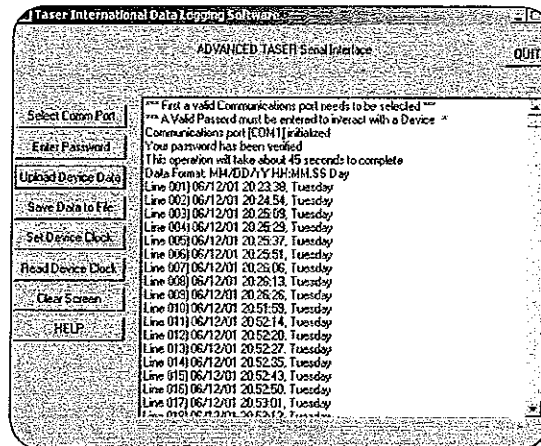


Effective

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M26 Dataport

Slide 22



Again, when we introduced the M26 we didn't just introduce an improvement in the performance of the weapon, we also integrated another technology innovation to help prevent misuse.

The M26 was the first hand-held weapon that could connect to a computer and download information about how it was used. The Dataport in the M26 records the time and date of every trigger pull – so the ECD can provide an impartial record of how many ECD applications were discharged in a given incident.

The Dataport in the M26 has helped officers disprove false allegations against them claiming they had applied an excessive number of ECD applications. This type of incident data collection has had a tremendous beneficial value in disposing quickly of false complaints.

The M26 records firing data at the beginning of the trigger pull. Also, if the trigger is held longer than 5 seconds an additional data point is inserted for each additional 5 seconds of continuous discharge and will appear as a separate firing record.

shaped pulse
ARC and Steam Phase

Shaped Pulse

Test

As the M26 grew in popularity, our customers really wanted a smaller unit that could fit more easily on their belts. So, we embarked on a major R&D effort to miniaturize the technology.

The NMI pulse used in the M26 can be thought of as a "blunt" pulse of electricity – a single pulse of energy that must be able to penetrate through the clothing and air gaps if the probes don't contact the skin, and this pulse must also deliver enough electric charge into the body to cause incapacitation. You can think of this like trying to throw a bathtub full of water over a wall – you need to get a collection of electric charge up to a high enough voltage to jump across a barrier. As you can imagine, this is not a highly efficient approach – most of the energy is consumed by generating the high voltage needed to penetrate any barriers, so there is a very high energy loss.

Luckily, Max Nerheim, our then VP of Research and Development, invented a much more efficient technology called "shaped pulse" technology. We named it after "shaped charge" technology used in military explosives. With a normal explosive used in a bomb or missile, most of the energy from the explosion dissipates into the air, not into the target. With a shaped charge, the explosive is formed in such a way that the energy from the explosion is focused into the target.

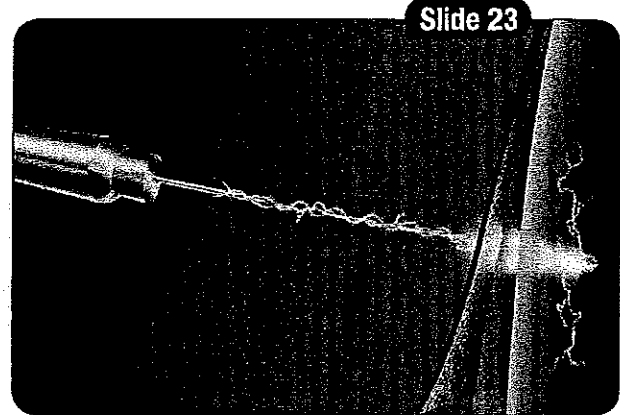
With the shaped pulse, we use 2 pulse phases working together rather than just one pulse like in the M26. The first phase, the "Arc" phase is a small high voltage pulse we use to penetrate the clothing barriers and generate an electric arc. Once the arc forms, we deliver a second stimulation phase or "stim" phase to deliver the bulk of the electric charge. As it turns out, once an electric arc forms, it's almost like a virtual wire – secondary pulses can "ride the lightning" as if the gaps or barrier didn't exist. So now, rather than trying to lift all the charge to a high voltage (like throwing a bathtub over a wall), we only "lift" a small amount of charge to a high voltage and once this small pulse forms the arc, we deliver the rest of the electric charge without all the wasted energy. It's like throwing a small glass of water over the wall, but once it gets to the other side, the wall temporarily disappears and the rest of the water can just flow across.

Shaped Pulse Technology uses about 80% less energy than a traditional "blunt" NMI pulse, yet it delivers a comparable amount of electric charge and effect on target.

The timing is so fast that to most electronic instrumentation, and all human observers, the Shaped Pulse appears as just one output pulse (arc). The result of Shaped Pulse NMI Technology is a high-performance ECD with an incapacitating effect 5% greater than the M26. The X26 is 60% smaller and lighter consuming 1/5th the power.

2003: TASER X26

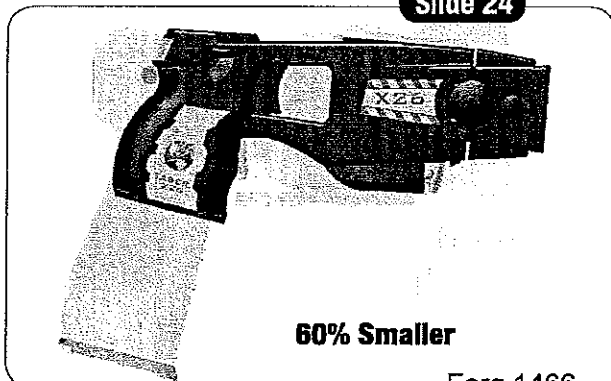
As a result, we were able to engineer a new TASER ECD called the X26, which is 60% smaller and lighter than the M26.



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Module 2: Technology and History

Slide 24



60% Smaller

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Version 17 • 5/10

Pulse Impact Comparison

2

Module 2: Technology and History

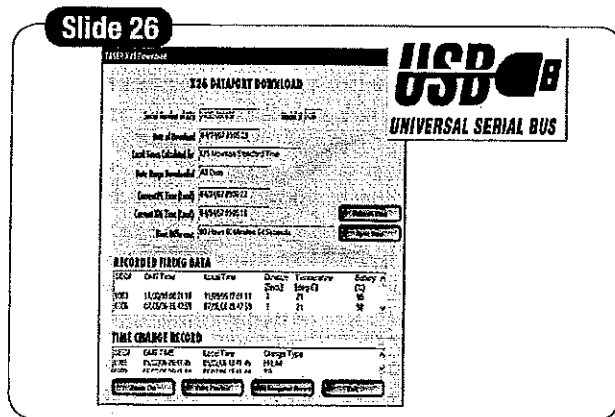


Another benefit of Shaped Pulse Technology is that, because it uses less total energy, it generates less heat and less skin irritation at the point of entry.

If you compare the signature marks from a 15 second drive stun from an X26 to a 15 second drive stun with an M26, you can see significantly less irritation with the shaped pulse from the X26.

NOTE: Both of these marks were created by a long, 15-second drive-stun burst to the skin of an anesthetized pig (very similar to human skin)

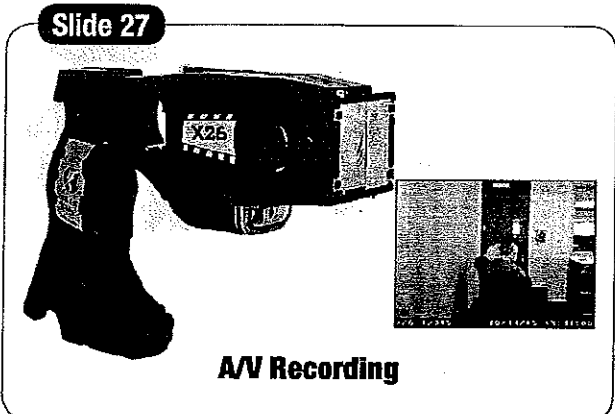
USB Enabled



In addition to the Shaped Pulse and a host of other technologies, we upgraded the Dataport in the X26 to a new USB dataport, making the X26 the world's first USB enabled hand-held weapon.

The X26 dataport also records additional information including the duration of each discharge, battery conditions, and system temperatures.

2006: TASERCam



In 2006, we added another key upgrade to the accountability systems of the X26 with the introduction of the TASER Cam – an audio video recording system that replaces a standard DPM to upgrade any X26 to have audio video recording capability.

Since the launch of the TASER Cam, TASER has become the global leader in on-officer video systems, with over 35,000 systems deployed by mid 2009.

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2007: TASER C2

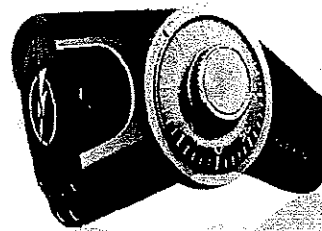
In 2007, we introduced a new NMI capable ECD for private citizens to protect themselves called the TASER C2. The C2 includes another technology breakthrough – this time to help prevent this technology from falling into the wrong hands.

The C2 uses a technology we invented called CheckLok. When the C2 is shipped, it is digitally locked in an inactive state – it cannot be used until the owner goes online or calls our call center to complete a secure background check. Only after they pass the background check are they given the activation code to be able to activate the C2. This ensures that every unit is registered to a person who passes a background check before it can be used.

Like AFID, CheckLok has proven highly effective in preventing people from misusing ECDs in the commission of illegal activities. And, in the few cases where crimes have been committed, we've had a very high percentage of cases where we have been able to provide law enforcement with the key information from our registration records that leads to an arrest and conviction.

Slide 28

CHECKLOK™



Citizen Background Checks

2

Module 2: Technology and History

2007: XREP Engine

But our biggest technological leap in 2007 was the development of the XREP Engine – shown here sitting on a U.S. dime. Weighing only a few ounces, the XREP engine can deliver comparable NMI effect to the X26, but in a size that can be packaged into a self-contained wireless projectile.

The key difference with the XREP is that it does not generate a high voltage that can arc through clothing, so it must make contact to the skin. However, given the nature of the XREP projectile, it will likely make skin contact the vast majority of the time with at least its forward facing electrodes.

Slide 29

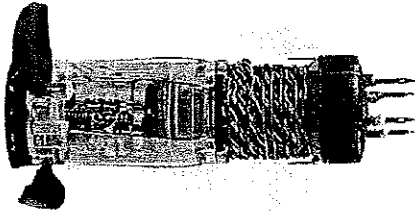


2008: XREP

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Module 2: Technology and History

Slide 30

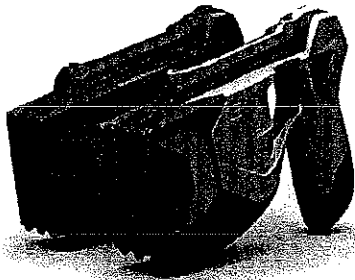


Extended Range

The XREP was released to field trials in early 2008, but we decided to do a substantial design improvement before we released the final round. With these improvements, the XREP has a breakthrough range of up to 100 feet, exceeding the range and accuracy of most traditional 12 gauge bean bag rounds.

2009: TASER X3

Slide 31



Multi-Shot

In 2009, we returned to upgrade our core hand-held ECD systems with the launch of the new TASER X3 with Rotational Pulse Drive Technology.

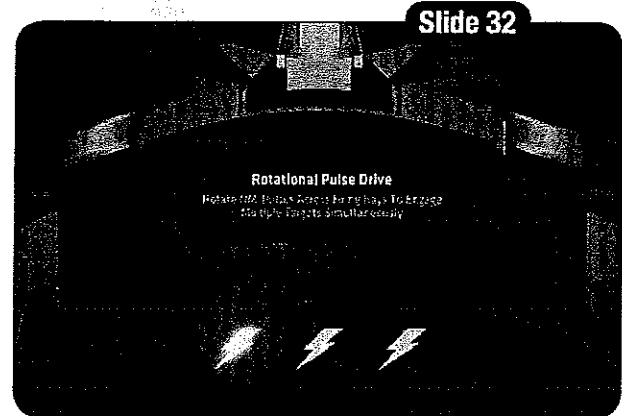
Since the launch of the TASER X26, almost 15,000 agencies have come to rely on ECD's. In fact, the data from most agencies indicate that, because of it's high effectiveness and low injury rate, agencies rely more on ECDs than any other use-of-force tool. In fact, it is estimated that officers use TASER ECDs twice as often

as OC spray or batons, and officers deploy TASER ECDs in actual scenarios over 100X more often than firearms.

So, what we have learned is that officers are relying on a single shot weapon for their first line of defense. With the X3, we can now offer the key capability to deploy multiple shots from a handheld ECD. So now, in case of a miss, the operator can immediately deploy a second or third discharge. In fact, the X3 can even be used on up to three separate subjects simultaneously. It's a huge breakthrough for officer safety that we believe will again revolutionize law enforcement.

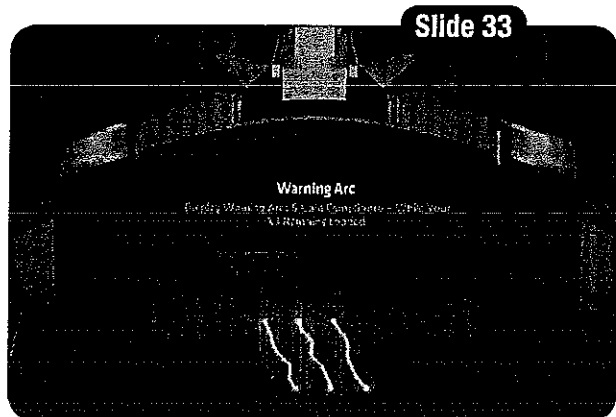
Rotational Pulse Drive

The X3 has dozens of breakthrough features and technology. Probably the biggest is the Rotational Pulse Drive, which allows the X3 to Rotate the Delivery of Shaped Pulse Discharges across multiple cartridge bays. This allows the device to simultaneously energize each cartridge to provide incapacitating effect similar to the X26.



Warning Arc

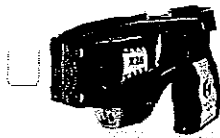
Another key advance is the new Warning Arc. Because the X3 has an independent fire control system, the X3 can generate warning arcs across the front of the cartridges while the X3 remains loaded. A study has shown that over 80% of resistant subjects will comply when shown the electric arc of an ECD in combination with good verbal skills. With the X3, you don't have to unload the system to display Warning Arcs to help persuade the subject to comply without use of actual force.



Slide 34

X26

No Barrier



Another key technology in the X3 is the new pulse calibration system. To understand how the pulse calibration system works, let's first start by looking at the output of a standard TASER X26.

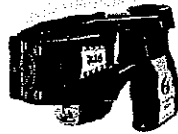
The X26 pulses about 19 times each second. Each pulse emitted by the X26 has approximately the same amount of electric charge...

If the probes are in the body of the subject, the full electric charge of each pulse is delivered into the body.

Slide 35

X26

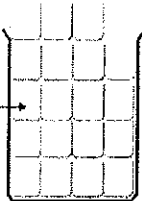
No Barrier



Add up 19 Pulses
Per Second =

2.1

milliamperes

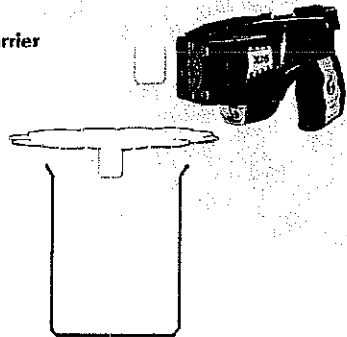


To determine how much current the X26 is delivering, we simply add up the charge from each of those 19 pulses every second. So, in the case where the probes are penetrated into the skin, and there is no barrier across which the X26 must arc, the total current delivered is about 2.1 milliamperes.

Slide 36

X26

Clothing Barrier

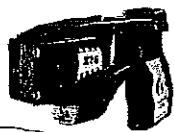


However, if there is a clothing barrier, where the pulse from the X26 must arc across a clothing gap – the total amount of charge that reaches the body is less. For illustrative purposes, you can visualize as though some of the electric charge is lost while penetrating the barrier. In fact, sometimes up to half of the electric charge can be lost.

Slide 37

X26

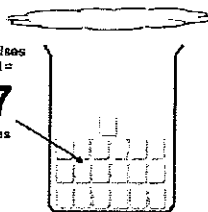
Clothing Barrier



Add up 19 Pulses
Per Second =

0.97

milliamperes



So – if we add up these smaller pulses that make it all the way into the body when there is a clothing barrier – the current delivered can drop significantly – to less than 1 milliampere in some cases.

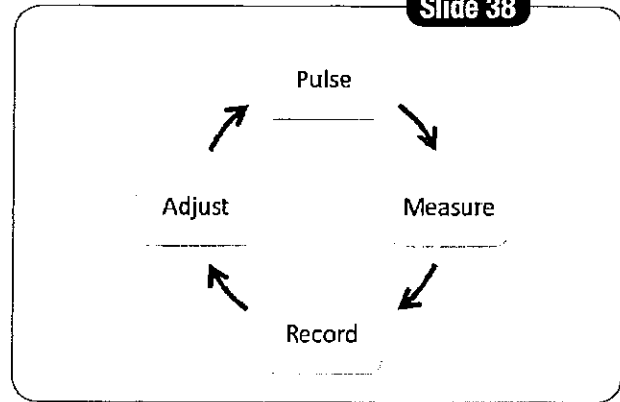
X3 Pulse Calibration System

Slide 38

By comparison, Pulse Calibration System controls the amount of electric charge in every pulse delivered. The key voltage and charge variables for each pulse are measured and recorded, then the X3 uses this information to adjust the output for the next pulse to deliver a consistent amount of current into the body.

Whereas the X26 emits a constant magnitude of electric pulse, but the amount of current actually delivered can vary somewhat depending on target conditions, the X3 measures how much electric charge was actually delivered through the subject's body circuit and adjusts the magnitude of the next pulse so that the actual amount delivered is more consistent.

This results in more consistent incapacitation as well as improved safety margins over prior generations.



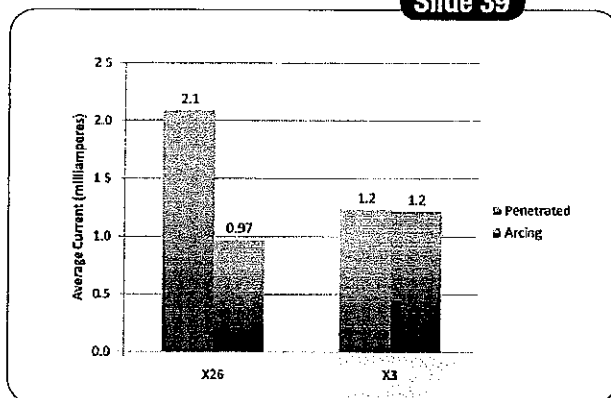
Output Current

Slide 39

For example, an X26 with the probes fully penetrated into the body will output about 2.1 milliamperes. However, if the probes are in the clothing, the current delivered to the body drops roughly in half to less than 1 milliamperes.

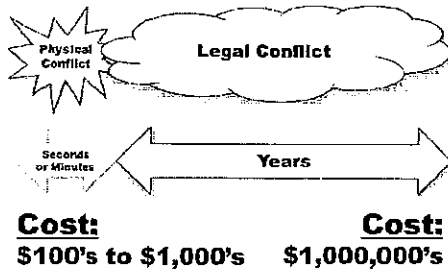
In contrast, the X3 measures the charge, arcing voltage, and stimulating voltage for each and every pulse delivered. And, it constantly adjusts the next pulse to achieve a targeted current output of 1.2 milliamperes.

As you can see in the chart, the output current of the X3 is much more consistent than the X26 – resulting in more consistent take down power when it must arc through clothing, and greater safety margins when the probes penetrate the skin.



Critical Incidents: Global View

Slide 40



As our ECDs have become widely used by law enforcement, we've learned so much not just about the challenges officers face in the streets, but also the challenges agencies face in the courtroom.

Police work is, by its very nature, a high-risk endeavor. And it is inherently controversial. So, virtually every physical encounter officers must face in the streets can transition into a legal conflict over exactly what happened. Officers and agencies face allegations of excessive

force, civil rights violations, and even wrongful death.

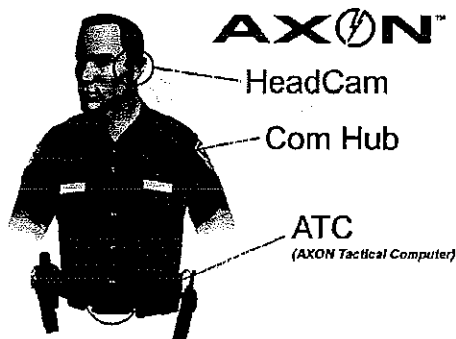
As a result, the critical incidents where officers must make life and death decisions in a matter of seconds lead to legal proceedings where judges, attorneys, jurors and the media spend years second guessing what really happened.

These legal challenges are incredibly stressful and emotional for all parties involved. Further, the financial costs of these post incident proceedings dwarf the costs associated with the actual event.

At TASER, our primary mission is to address these critical incidents where lives hang in the balance. However, we have now extended our mission to significantly reduce the costs associated with the post-incident legal reviews as well. In other words, we are expanding our products and technology to not only protect officers from physical threats in the streets, but to protect their careers and reputations from falsehoods in the legal proceedings that follow.

AXON Tactical Computer

Slide 41



At the core of this expanded focus is the new AXON Tactical Computer. The AXON combines the capabilities of an in-car camera system with a tactical computer that goes with the officer, recording the visual perspective of the officer as they perform their duties. The intent is very simple: we want to eliminate the speculation that critics make about what officers saw or did by providing an audio video record of what actually happened.

The AXON consists of three primary components – the HeadCam – which provides an in-ear communication system for your radio coupled with the video camera for the AXON in one blue-tooth size device.

The ComHub is a small communications bus that controls audio video information between your radio, the headset, and the third component, the AXON Tactical Computer, or ATC.

Data Untouched By Human Hands

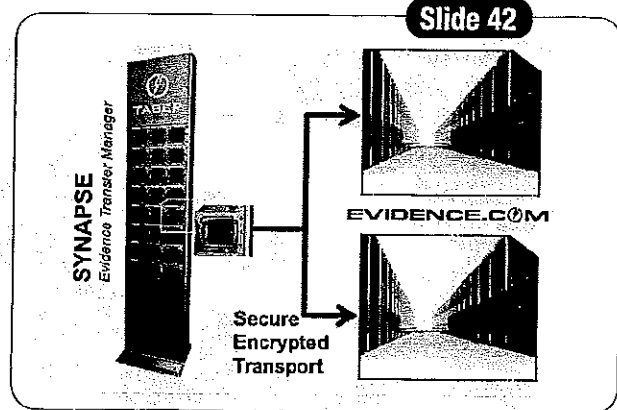
As we developed the AXON and worked with agencies to understand their needs, we learned that the biggest challenge agencies are facing is not just buying video hardware, it's how to securely store, manage and analyze the data.

Agencies usually have to go out and buy their own data servers and set up their own video data centers. Needless to say this is a very complex, expensive, and technologically risky endeavor.

So, with AXON, we decided to provide a full end-to-end solution. We provide a world-class data hosting service called Evidence.com.

So, AXON users just drop off their units at the end of the shift in a charging station called the Synapse Evidence Transfer Manager, or ETM. While the AXON is being recharged, the data is encrypted, and securely uploaded to the massive data centers we provided as part of the service at EVIDENCE.COM. There are no servers to buy, no data center to setup, no customer programming required. All you need is internet access. And if you don't have a high bandwidth internet connection – no problem, we can assist in bringing the internet connection to you.

An important added benefit of this approach – the data is untouched by human hands. Officers don't have to log in, or download information and the information never sits on a general use PC where it could be altered or deleted.



2

Module 2: Technology and History

Evidence.com

The real value of EVIDENCE.COM is secure digital evidence storage consistent with the Federal Rules of Evidence by providing secure storage and chain of custody. EVIDENCE.COM unlocks the information within your data to give you strategic capabilities never before possible.

EVIDENCE.COM uses the GPS tags from the AXON data to present your incidents in a highly graphical display. The human brain can process visual data much better than complex data tables. So, EVIDENCE.COM plots your incident data on a map, allowing command staff to look for trends, helping you optimize resource allocation. Click on any incident...



Evidence.com

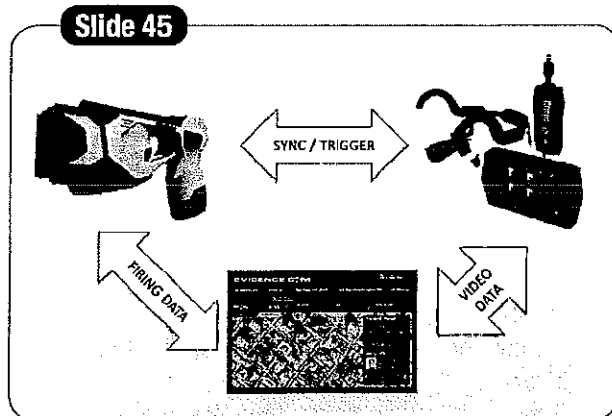
2

Module 2: Technology and History



... to drill down to see the video of the event (as well as any other uploaded information for each individual case). In fact, EVIDENCE.COM has a ground-breaking feature called perspective hopping – where you can jump to the AXON video feeds from different officers to watch the events unfold from a different point of view. There's minimal typing or manual data input required – EVIDENCE.COM synchronizes videos based on case numbers or geographic proximity to automatically link together separate videos of the same incident.

Advanced Technology Officer



All of these advanced technologies work together to create breakthrough capabilities never before possible. Both the X26, X3, TASER CAM, and AXON can download information into EVIDENCE.COM for secure storage and analysis. With the TACOM wireless networking capability, the X3 and the AXON communicate to each other in real time out in the field – assuring time synchronization and allowing the X3 to send signals to start recording and time stamp events to the AXON video.

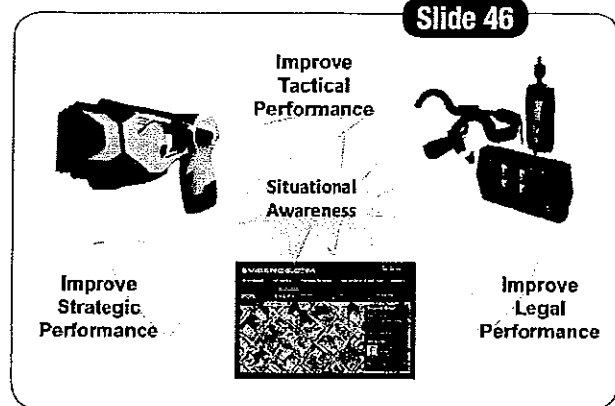
Together, AXON, X3 and EVIDENCE.COM form the backbone of our new ADVANCED TECHNOLOGY OFFICER Initiative. The ADVANCED TECHNOLOGY OFFICER Initiative is an effort to modernize law enforcement capabilities through safer use of force, better documentation of police-community interactions, and more strategic information analytics. In other words, ADVANCED TECHNOLOGY OFFICERS are better able to perform their duties in apprehending suspects, better able to document their actions to dispel distrust and build stronger relationships with the broader community, and use this information to better visualize trends, solve crimes, and improve performance of the law enforcement mission.

Advanced Technology Officer

Working together, the TASER X3, AXON and EVIDENCE.COM create even more than a network of integrated capabilities. They create a feedback loop that improves performance at the officer, agency and interagency level – enabling more effective, safer law enforcement while improving community relations.

The TASER X3 enables officers to better deal with resistant subjects – improving tactical performance by reducing the risk of injuries or death in critical incidents. AXON documents those incidents from the officer's visual perspective, removing much of the uncertainty that leads to public outcry based on conjecture about what may or may not have happened.

As a result, agencies can better defend the actions of their officers, and better prosecute actions documented on video – yielding significantly improved agency performance in legal forums. EVIDENCE.COM, in addition to seamlessly preserving digital evidence from AXON, X3, and other digital media, integrates this information into strategic maps that enable better resource allocation and strategic command and control to improve agency performance at the strategic level – which feeds back to the individual officers who are now armed with better situational awareness and more defined tactical awareness of their patrol areas.



2

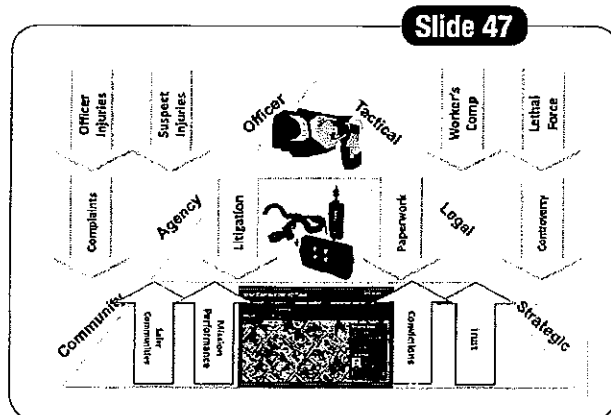
Module 2: Technology and History

Force Multiplier

The performance impact of the TASER Advanced Technology Officer system is a true force multiplier. At the officer level, TASER ECDs improve tactical performance, allowing officers to more safely do their jobs while minimizing risk of serious injury to themselves and the people they interact with. TASER ECDs dramatically decrease injuries to suspects, injuries to officers, and worker's compensation expenses associated with officer injuries. Further, widespread TASER ECD deployment has led to significant reductions in the use of lethal force.

At the agency level, the AXON improves legal performance as incidents transition from the field into legal forums for adjudication. On-officer cameras reduce citizen complaints as well as streamlining litigation by eliminating many of the he-said / she-said disputes as to the actual course of events. Further, by collecting solid multi-media evidence, the need to generate excessive paperwork and written statements is significantly reduced, freeing up more officer time to perform policing tasks rather than document creation. Finally, the availability of an impartial audio-video record reduces the risk of controversies about police work.

At the highest level, EVIDENCE.COM better enables law enforcement to perform its key mission of protecting the community. As complaints and controversy fall, trust between the community and the police agency increases. And improved multi-media evidence leads to higher conviction rates while reducing the workload on prosecutors.



Better digital evidence, with protected chain-of-custody will yield higher convictions as juries can see the actual events witnessed by police officers.

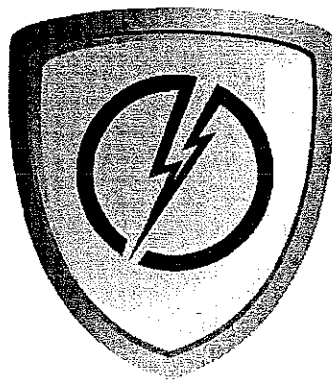
But the true power of EVIDENCE.COM is not from its ability to record, preserve and present evidence from any single case. The real breakthrough with EVIDENCE.COM is the ability to visualize the incidents within your agency using geo-spatial mapping tools that give law enforcement leadership the ability to visualize trends and develop meaningful strategic plans to better protect our communities based on data driven strategic management.

Only the TASER Advanced Technology Officer System provides an integrated tool set that improves performance and safety during critical incidents, during the legal proceedings that ensue, and at the strategic level where leadership must develop plans and allocate resources to address thousands of these incidents every year.

I hope this history has been helpful in understanding our technology, our history, and our philosophy for developing future capabilities to help better protect law enforcement officers and the communities they are charged to protect. Thank you for your time.

Module 3

Medical & Safety



P r o t e c t L i f e

Instructor Certification Course * TASER® X26™ Electronic Control Device

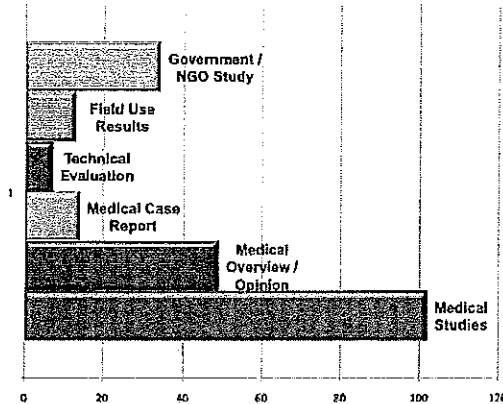
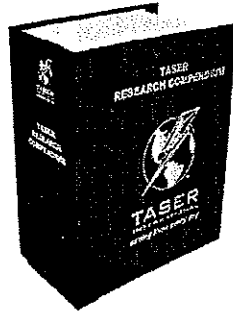
Version 17 Released May 2010

TASER ECDs are among the most extensively studied force tools/ techniques in history

Slide 1

3

Module 3: Medical & Safety



There have been over 200 Peer Review Journal Articles Published and Poster Presentations and Abstract Presentations in scientific assemblies.

Instructor Notes: This section is not a complete outline of ECD related medical research and information. Electrical energy delivered to a human has been studied and reported in the peer-reviewed medical, scientific, electrical, and engineering research for three centuries. Thus, there is a large amount of published research on the effects of delivered electrical charge on a human.

See (current) TASER Warning, Product Manual, and other relevant materials.

See (current) TASER Electronic Control Device Research Index and associated literature.

See (current) In-Custody Death Research Index and associated literature.

Refer to the Research tab on the TASER International web site (www.TASER.com) for more information.

Many scientific institutions have researched TASER Technology

Slide 2



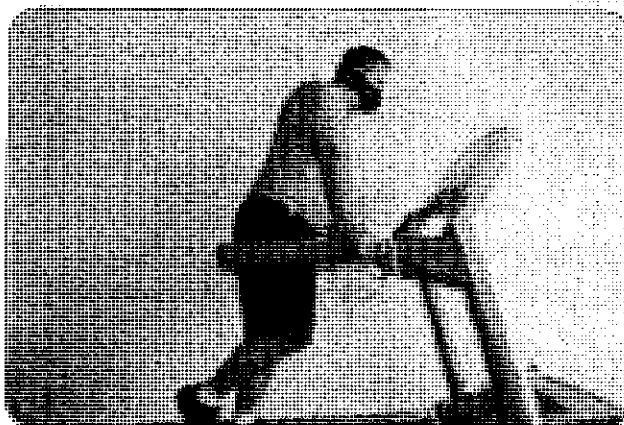
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Overview of Research

Slide 3

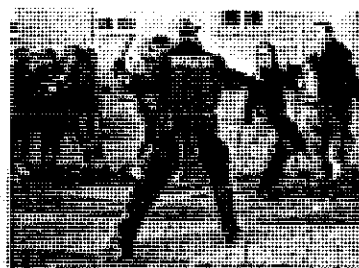
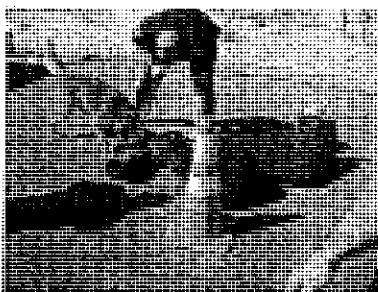
- Approximately 500+ volunteers of varying degrees of health have been monitored
- Blood Chemistries, Stress Hormones, Breathing, Body Core Temperature, Heart Monitoring (including via 12 lead EKG and Ultrasound) were some of the data points collected



TASER Technology Medical Testing

Slide 4

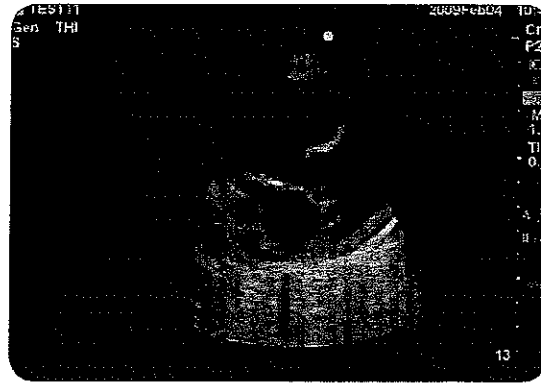
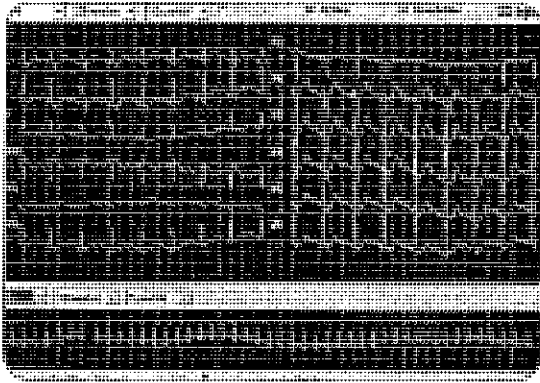
Numerous Human studies have shown lower effects on human physiology as compared to some other force options.



Cardiac

Slide 5

There have been numerous studies specifically studying the cardiac effects of TASER technology.



3

Module 3: Medical & Safety

Cardiac

Slide 6

- The TASER X26 did not electrically capture the human heart when used with probe deployment. These data are in agreement with 2 prior studies by these authors but are contrary to animal studies in which capture occurred.

Conclusions: In this study, a training instructor discharged a TASER X26 into the chests of 10 subjects from a distance of 7 ft so that a 5-second discharge could be administered through the probes as in field exposures. Limited echocardiography was performed before, during, and after discharge. In agreement with 2 prior studies by these authors, the TASER X26 did not electrically capture the human myocardium when used with probe deployment. These data are contrary to animal studies in which capture occurred.

Dawes DM, Ho JD, Reardon RF, Miner JR. Echocardiographic evaluation of TASER X26 probe deployment into the chests of human volunteers. Am J Emerg Med. Jan 2010;28(1):49-55

Cardiac

Slide 7

- Risk of an ECD application having a negative effect on a person's heart rate and/or rhythm is not zero
- The risk of an ECD causing cardiac arrest in humans from ventricular fibrillation is sufficiently remote that making accurate estimates is very difficult. Current estimates of the risk are on the order of 1 in 100,000 applications

Sun H, Haemmerich D, Rahko PS, Webster JG. Estimating the probability that the Taser directly causes human ventricular fibrillation. J Med Eng Technol. Apr 2010;34(3): 178-191. This paper describes the first methodology and results for estimating the order of probability for a TASER ECD directly causing human ventricular fibrillation (VF). The probability of an X26 Taser causing human VF was estimated using: (1) current density near the human heart estimated by using 3D finite-element (FE) models; (2) prior data of the maximum dart-to-heart distances that caused VF in pigs; (3) minimum skin-to-heart distances measured in erect humans by echocardiography; and (4) dart landing distribution estimated from police reports. The estimated mean probability of human VF was 0.000006 for data from a pig with no resection when inserting a blunt probe. One risk of applying electricity to a human is the direct induction of ventricular fibrillation (VF). In addition to electrically induced direct VF induction, other risks include, but are not limited to: cardiac capture/pacing for sufficiently long duration to deteriorate to VF and through sufficiently significant physiological or metabolic effects to negatively impact the heart.

Cardiac

Slide 8

- Experts have identified heart to dart distance as being a key determining factor in whether an ECD can affect the heart.
- The further an ECD dart is away from the heart, the lower the risk of affecting the heart.

Sun H, Haemmerich D, Rahko PS, Webster JG. Estimating the probability that the Taser directly causes human ventricular fibrillation. J Med Eng Technol. Apr 2010;34(3):178-191

Cardiac

Slide 9

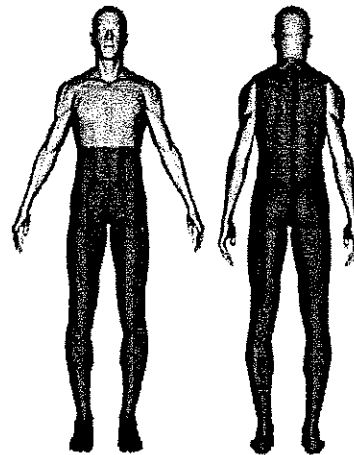
We have issued a new TASER Targeting Guide.

Note, we have lowered the recommended point of aim from center of mass to lower-center of mass for front shots. The gray highlighted area in the target man represents the preferred target area. There are three reasons:

1. Simplify targeting for all TASER systems to one easy to remember map, avoiding chest shots when possible and the risk of a head/eye shot in a dynamic situation, as is standard for impact munitions
2. When possible, avoiding chest shots with ECDs reduces the risk of affecting the heart and avoids the controversy about whether ECDs do or do not affect the human heart.
3. Close-spread ECD discharges to the front of the body are more effective when at least one probe is in the major muscles of the pelvic triangle or thigh region

Back shots remain the preferred area when practical. We believe this recommendation will improve the effective use of TASER ECDs while also further increasing safety margins and enhancing the ability to defend such cases in post event legal proceedings.

Preferred Target Areas in Gray



3

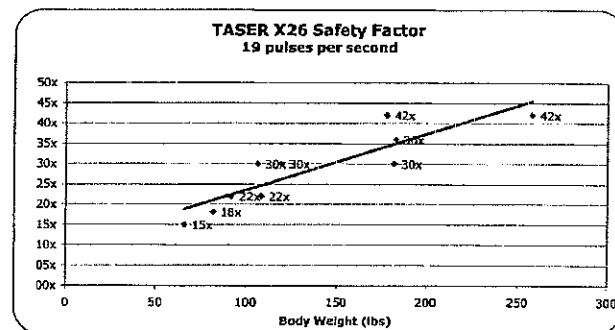
Module 3: Medical & Safety

Cardiac

Slide 10

This safety chart is from the Medical Safety testing of the TASER X26. The results were accepted for publication in January 2005 in Pacing and Clinical Electrophysiology (PACE), a prestigious peer-reviewed journal in the field of pacing and implantable cardioversion defibrillation.

These results indicate a 15x safety factor for the X26 when applied directly across the chest of a 60 pound test animal using the "worst case" trans-chest electrode placement. In other words, it took 15 times the stimulating output of the X26 to cause the animal to fibrillate in a typical "worst case" scenario. If the electrodes are not directly across the chest area, the safety margin will of course be higher.



Note: that the safety margin increases with body mass, to a 42x safety factor for a 250 pound animal subject.

Abstract: TASER type devices discharge a pulsed dose of electrical energy to cause muscle contraction and pain. Field data suggest electrical NMI devices present an extremely low risk of injury. One risk of applying electricity to a human is the induction of ventricular fibrillation (VF). We hypothesized that inducing VF would require a significantly greater NMI discharge than a discharge output by fielded devices.

Methods and Results: The cardiac safety of TASER type discharges was studied in a large porcine model ($n = 9$, 60 ± 28 kg). Minimum fibrillating level was defined as the lowest discharge level that induced VF at least once, maximum safe level was defined as the highest discharge level which could be applied 5 times without VF induction, and VF threshold was defined as their average. A safety index was defined as the ratio of the VF threshold to the standard discharge level output by fielded NMI devices. A VF induction protocol was applied to each porcine model to estimate VF threshold and safety index. The safety index for stored charge ranged from 15X to 42X as weight increased from 30 to 117 kg ($p < 0.001$). Discharge levels above standard discharge and weight were independently significant for predicting VF induction.

Conclusions: The safety index for an NMI discharge was shown to have a significant and positive association to weight. Discharge levels for standard electrical NMI devices have an extremely low probability of inducing VF.

Medical Safety (Bozeman)

Slide 11

- From a public health perspective the use of ECDs is similar to that of automobile airbags, which are also known to pose a small risk of serious injury and even death in rare cases, but are clearly responsible for marked overall reductions in injuries and fatalities. The overall balance of risks versus benefits in terms of injuries prevented and lives saved weighs heavily in favor of the use of both.

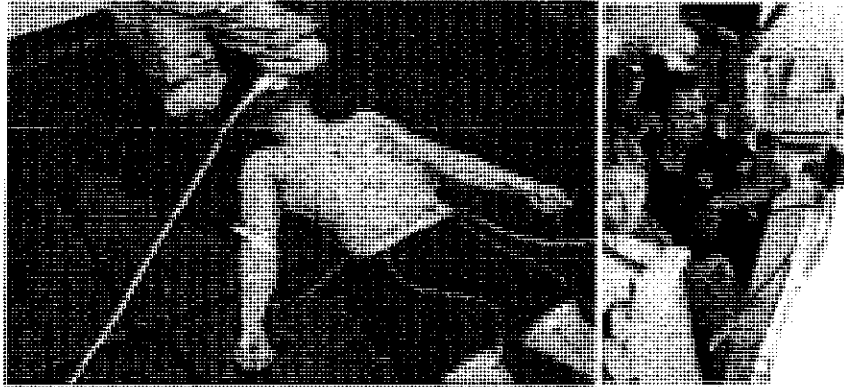
Conclusions: From a public health/epidemiologic perspective the use of conducted electrical weapons is similar to that of automobile airbags, which are also known to pose a small risk of serious injury and even death in rare cases, but are clearly responsible for marked overall reductions in injuries and fatalities. While investigations to clarify the risks and optimize the safety of these devices must continue, the overall balance of risks versus benefits in terms of injuries prevented and lives saved weighs heavily in favor of the use of both.

Bozeman, W P. Additional Information on TASER safety. Annals of Emergency Medicine. November 2009. Vol. 54, No. 5; and Bozeman WP, Hauda WE, 2nd, Heck JJ, Graham DD, Jr, Martin BP, Winslow JE. Safety and Injury Profile of Conducted Electrical Weapons Used by Law Enforcement Officers Against Criminal Suspects. Ann Emerg Med. Jan 21 2009.

Physiology

Slide 12

There have been over 31 studies specifically studying the breathing or physiological effects of TASER technology



3

Module 3: Medical & Safety

Acidosis

Slide 13

- Over 17 specific studies on acidosis have been conducted. Acidosis refers to a condition of decreasing pH (usually measured in blood plasma). Although numerous conditions can cause acidosis, law enforcement personnel commonly confront individuals who are susceptible to developing acidosis because of the individual's behaviors that may include: illicit or prescription drug use, intoxication, agitation, delirium, physical exertion, fighting, resisting arrest and restraint, or fleeing from officer. Many of these behaviors occur in combination and may be additive.

Acidosis is a condition that occurs across a spectrum. While both a pH of 7.35 and 6.20 indicate an acidotic state; these 2 pH levels are clinically very different. The lower value of 6.20 is likely to be lethal and the upper value of 7.35 would likely not even be physically noticeable to an individual. An individual can be acidotic (by definition) but NOT be in any danger physiologically. For instance, briskly walking up flights of stairs would make most people acidotic, but would not put one in any medical danger.

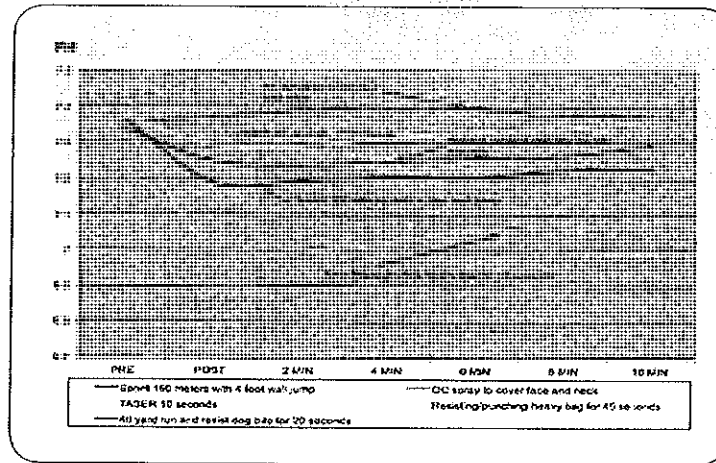
While muscle activity does produce lactic acid, human studies of ECD exposures up to 15 seconds (or 3 cycles) in rested human subjects resulted in minimal increases in acidosis that did not approach a dangerous level and was clinically not noticed by the test subjects.

Strong physical exertion, such as resisting law enforcement restraint or fleeing from officers, can lead to profound metabolic acidosis and measures to limit the period of resistance or flight might be beneficial in already acidotic persons.

Acidosis

Slide 14

Following is a pH graph that depicts study results. The least amount of decrease in pH is the safest.



Muscle contractions from TASER device exposures for up to 10 and 15 seconds in rested human subjects resulted in minimal increases in acidosis that did not approach a dangerous level and was clinically not noticed by the test subjects.

Physical activity similar to fighting and resisting or fleeing from law enforcement produced the worst and most clinically significant acidosis. This volitional activity was clearly the most potentially harmful from a physiologic standpoint and the test subjects clinically felt ill following this activity.

Canine takedown and restraint had the highest increase of acidosis levels of the law enforcement tools tested.

OC spray had the least increase in acidosis levels of the law enforcement tools tested. This was expected since TASER device application stimulates muscles and OC spray does not. The researchers opined that since OC spray does not usually incapacitate a focused person or a person intoxicated on drugs or alcohol, the fight or flight is likely to continue and may result in worsening acidosis. It is likely that OC spray, while not directly causing acidosis, could indirectly make it worse.

Breathing

Slide 15

- Over 13 research analysis on effects on breathing have been conducted
- The available human data directly contradicts animal studies and does not reveal evidence of breathing impairment or respiratory acidosis

Instructor Notes: This section is not a complete outline of ECD related medical research and information. Electrical energy delivered to a human has been studied and reported in the peer-reviewed medical, scientific, electrical, and engineering research for three centuries. Thus, there is a large amount of published research on the effects of delivered electrical charge on a human.

See (current) TASER Warning, Product Manual, and other relevant materials.

See (current) TASER Electronic Control Device Research Index and associated literature.

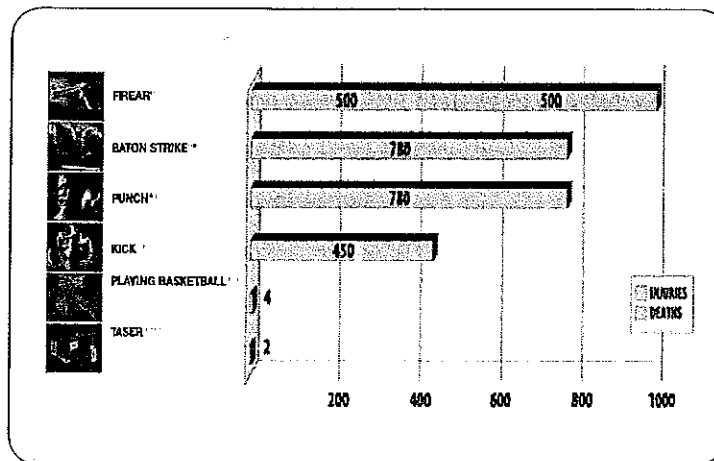
See (current) In-Custody Death Research Index and associated literature.

3

Module 3: Medical & Safety

ECDs Reduce Injuries

Slide 16



Field Analysis

Slide 17

3

Module 3: Medical & Safety

- There have been over 70 field analysis performed on the safety benefits of TASER Technology
- One study looked at 1201 cases over 36 months at 6 different locations

Conclusion: To our knowledge, these findings represent the first large, independent, multicenter study of conducted electrical weapon injury epidemiology and suggest that more than 99% of subjects do not experience significant injuries after conducted electrical weapon use.

Bozeman WP, Hauda WE, 2nd, Heck JJ, Graham DD, Jr., Martin BP, Winslow JE. Safety and injury profile of conducted electrical weapons used by law enforcement officers against criminal suspects
Ann Emerg Med. Apr 2009;53(4):480-489.

In addition to other sources, see:

- (current) TASER ECD Research Index
- (current) TASER ECD Risk Management Injury Reduction PowerPoint Presentation
- Bozeman, W P. Additional Information on TASER safety. *Annals of Emergency Medicine.* November 2009. Vol 54, No. 5.
- John M. MacDonald, Robert J. Kaminski, and Michael R. Smith. The Effect of Less-Lethal Weapons on Injuries in Police Use-of-Force Events. *Am J Public Health.* published 21 October 2009, 10 2105 AJP.2009.159616.
- W P Bozeman, D G Barnes, Jr, J E Winslow, III, J C Johnson, III, C H Phillips, and R Alson. Immediate cardiovascular effects of the Taser X26 conducted electrical Weapon. *Emerg. Med. J.* 2009; 26(8): p. 567-570.
- Eastman, A.L., et al., Conductive electrical devices: a prospective, population-based study of the medical safety of law enforcement use. *J Trauma.* 2008. 64(6): p. 1567-72
- (09/09) Comparing safety outcomes in police use-of-force cases for law enforcement agencies that have deployed conducted energy devices and a matched comparison group that have not: A quasi-experimental evaluation.

Police Executive Research Forum, National Institute of Justice.

"Overall, the study showed that use of CEDs is associated with a 70-percent reduction in the chances of an officer being injured compared to agencies that do not use CEDs. And the odds of a suspect being injured are reduced by more than 40 percent in CED agencies compared to non-CED agencies."

"All in all, we found consistently strong effects for CEDs in increasing the safety of officers and suspects," said Dr. Bruce Taylor, director of research at PERF.

"Not only are CED sites associated with greater levels of safety compared to a matched group of non-CED sites, but also within CED agencies, in some cases the actual use of a CED by an officer is associated with a higher level of safety compared to incidents in which officers used other types of less lethal weapons, such as batons."

Field Analysis (Eastman)

Slide 18

- All ECD activations (426 ECD activations during 11/01/04 through 01/31/06)
- All suspects rapidly received medical evaluation or simple first aid.
- In 5.4% of deployments (23 out of 426), ECD use was deemed to have clearly prevented the use of lethal force by police.
- No suspect required further treatment except one who was later found to have severe toxic hyperthermia and who died within 2 hours of activation despite rapid on-scene intervention.

Eastman, A L., et al., Conductive electrical devices: a prospective, population-based study of the medical safety of law enforcement use. J Trauma, 2008. 64(6): p. 1567-72.

Field Analysis (MacDonald)

Slide 19

"Given the findings from this study, as well as those from previously published research, law enforcement agencies should encourage the use of OC spray or CEDs [Conducted Energy Devices] in place of impact weapons and should consider authorizing their use as a replacement for hands-on force tactics against physically resistant suspects...."

Slide 20

Injuries from police use-of-force incidents continue to be a public health problem affecting tens of thousands of civilians and police officers in the United States each year. Our findings suggest that the incidence of these injuries can be reduced substantially when police officers use CEDs and OC spray responsibly and in lieu of physical force to control physically resistant suspects."

J M MacDonald, R J Kaminski, and M R Smith, The Effect of Less-Lethal Weapons on Injuries in Police Use-of-Force Events, American Journal of Public Health, Dec 2009 Vol 99, No 12 p 2268-2274.

3

Module 3: Medical & Safety

Physiologic or Metabolic Effects

Slide 21

- The ECD can produce physiologic or metabolic effects which include, but are not limited to, changes in: acidosis; adrenergic states; blood pressure; calcium, creatine kinase ("CK"); electrolytes (including potassium), heart rate and rhythm; lactic acid; myoglobin; pH; respiration; stress hormones or other biochemical neuromodulators (e.g., catecholamines).
- Reasonable effort should be made to minimize the number of ECD exposures and resulting physiologic and metabolic effects

Physiologic or Metabolic Effects

Slide 22

In human studies of electrical discharge from a single ECD of up to 15 seconds, these effects on acidosis, CK, electrolytes, stress hormones, and vital signs have been comparable to or less than changes expected from physical exertion similar to:

- Struggling
- Resistance
- Fighting
- Fleeing
- Some other force tools or techniques.

Adverse physiologic or metabolic effects may increase risk of death or serious injury.

Instructor Notes: This section is not a complete outline of ECD related medical research and information.

Electrical energy delivered to a human has been studied and reported in the peer-reviewed medical, scientific, electrical, and engineering research for three centuries. Thus, there is a large amount of published research on the effects of delivered electrical charge on a human.

See (current) TASER Warning, Product Manual, and other relevant materials.

See (current) TASER Electronic Control Device Research Index and associated literature.

See (current) In-Custody Death Research Index and associated literature.

Higher Risk Populations

Slide 23

- ECD use has not been scientifically tested on:
 - Pregnant women
 - The infirm
 - The elderly
 - Small children
 - Low body-mass index (BMI) persons
- ECD use on these individuals could increase the risk of death or serious injury.

Instructor Notes: Although ECDs have been used in the field on members of each of these high risk populations, often without injury, it is unknown if these individuals are at a higher risk of injury or death due to a lack of scientific research.

Physiologically or Metabolically Compromised Persons

Slide 24

- Law enforcement personnel are called upon to deal with individuals in crises that are often physiologically or metabolically compromised and may be susceptible to arrest-related death (“ARD”)
- The subject may already be at risk of death or serious injury as a result of pre-existing conditions, individual susceptibility, or other factors
- Any physiologic or metabolic change may cause or contribute to death or serious injury
- Follow your agency’s Guidance when dealing with physiologically or metabolically compromised persons.

Instructor Notes: This section is not a complete outline of ECD related medical research and information. Electrical energy delivered to a human has been studied and reported in the peer-reviewed medical, scientific, electrical, and engineering research for three centuries. Thus, there is a large amount of published research on the effects of delivered electrical charge on a human. See (current) TASER Warning, Product Manual, and other relevant materials. See (current) TASER Electronic Control Device Research Index and associated literature. See (current) In-Custody Death Research Index and associated literature.

Independent Conclusions

Slide 25

3

Module 3: Medical & Safety

Some of the latest TASER ECD Research can be viewed at:
www.taser.com/RESEARCH

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2 Stedman's Medical Dictionary, 26th Edition.

3 Ho JD, Dawes DM, Reardon RF, et al. Echocardiographic Evaluation of a TASER-X26 Application in the Ideal Human Cardiac Axis. *Acad Emerg Med*. Aug 10, 2008. *Heart Rhythm* 2008, 29th Annual Scientific Sessions, May 14-17, 2008, San Francisco, CA USA. Jeffrey D. Ho, MD, Donald M. Dawes, MD, Robert F. Reardon, MD, Anne L. Lapine, MD, Jeremy D. Olsen, MD, Benjamin J. Dolan, BA and James R. Miner, MD. Hennepin County Medical Center, Minneapolis, MN, Lompoc District Hospital, Lompoc, CA.

4 Sloane CM, Chan TC, Levine SD, Dunford JV, Neuman T, Vilke GM. Serum troponin I measurement of subjects exposed to the TASER X-26. *J Emerg Med*. 2008 Jul;35(1):29-32. Epub 2008 Mar 4.

5 Ho, JD, Dawes, DM, et al. Absence of Electrocardiographic Change Following Prolonged Application of a Conducted Electrical Weapon in Physically Exhausted Adults. *Acad Emerg Med*, 2007 (Supplement 1); 14: S128-S129.

6 Vilke G., Sloane, C., et al. Does the TASER Cause Electrical Changes in Twelve Lead ECG Monitoring of Human Subjects? *Acad Emerg Med*, 2007 (Supplement 1); 14:S104.

7 Levine, S., Sloane, C., Chan, T., et al. Cardiac of human subjects exposed to the TASER. *J Emerg Med*, 2007.

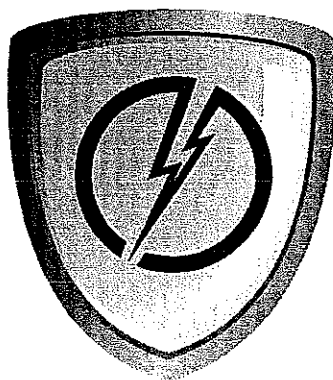
8 Ho, J., Dawes, D., et al. Ultrasound measurement of cardiac activity during conducted electrical weapon application in exercising adults. *Ann Emerg Med*, 2007; 50 (3): S108.

9 Ho JD, Miner JR, Lakkireddy DR, et al. Cardiovascular and physiologic effects of conducted electrical weapon discharge in resting adults. *Acad Emerg Med*, 2006;13:589-595.

10 Barnes Jr., D., Winslow, J., et al Cardiac Effects of the TASER X26 Conducted Energy Weapon. *Ann Emerg Med*, 2006; 48 (Supplement):102monitoring

Module 4

Legal & Case Law



P r o t e c t L i f e

Instructor Certification Course * TASER® X26™ Electronic Control Device

Version 17 Released May 2010

Legal

Slide 2

- Litigation risk
- Applicable court decisions
- How to avoid ECD excessive force liability

4

Module 4: Legal & Case Law

In this module, we will be looking at your risk of litigation as a law enforcement officer, court decisions regarding use of force in general and some cases specific to ECD use, and some considerations that can help minimize excessive force liability in the use of ECDs.

The standards for Law Enforcement force and ECD usage are:

- US Constitutional force standards
- State law force standards
- Department policy standards

Instructor Notes: TASER International cannot address all possible ECD application circumstances or permutations. TASER training, warnings, and other information are intended to inform Users about reasonably foreseeable potential risks of harm. The decision to Use the ECD in a particular manner or circumstance must follow applicable legal standards. TASER training, warnings, or other information do not create a standard of care.

TASER ECD Litigation Risk

Slide 3

- As a General rule, the greater the risk of injury to suspects caused by the force tool/technique, the greater the risk of liability and litigation to law enforcement.
- TASER ECDs have one of the lowest liability and litigation risk profiles of any force tool or technique. Law Enforcement agencies across the U.S. and Canada have documented significant reductions in officer and suspect injuries after implementing TASER ECDs. Many have also shown reductions in the use of deadly force, which carries a very high probability of litigation.

Graham Factors as Risk Prioritized Ranked by Chew

Order of Importance – Potential for Injury Risk Importance

Slide 4

- Immediate threat to safety of officers/others
- Actively resisting
- Circumstances tense, uncertain, rapidly evolving (“pace” of events)
- Severity of the crime at issue
- Attempting to evade seizure by flight

The landmark case that sets standards for law enforcement use of force under the Fourth Amendment is *Graham v. Conner*. In *Graham*, the Supreme Court established standards for determining if a use of force by an officer was reasonable. In *Chew v. Gates*, the 9th Circuit Court of Appeals ranked several of the *Graham* factors that can be used to assess the risk posed by an individual's actions.

The first factor is whether the subject poses an immediate risk to the safety of officers or others? Next, is the subject actively resisting the officers' attempt to perform their lawful duties? The third factor to consider is whether the circumstances of the situation were tense, uncertain and rapidly evolving. In other words, were the circumstances changing quickly and requiring immediate response from officers, or had the pace of the situation slowed and provided officers time to evaluate the situation and consider numerous options? The next factor to consider is the severity of the crime that the subject was suspected of committing or was in the process of committing. Finally, was the subject attempting to flee to evade seizure by officers?

Additional Force Factors

Slide 5

- Court may consider “the availability of [less injurious] alternative methods of capturing or subduing a suspect.” (*Smith v. City of Hemet*, 394 F.3d 689, 701 (9th Cir.2005))
- Court may consider what officers knew about the suspect's health, mental condition, or other relevant frailties.* (*Deorle v. Rutherford*, 272 F.3d 1272, 1282-83 (9th Cir. 2001); *Franklin v. Foxworth*, 31 F.3d 873, 876 (9th Cir.1994))
- Give a warning before force when appropriate.

Instructor Notes: Also, see: *Bryan v. McPherson*, 590 F.3d 767 (C.A.9 2009) – seat belt violation, failed to comply, clenched fists, profanities, acting out.

*See Force consideration in the Training manual or DVD

Clarifying the Graham Factors

(Immediate threat to safety of officers or others)

Slide 6

Graham's "immediate" vs. "possible" threat:

"[A] simple statement by an officer that he fears for his safety or the safety of others is not enough; there must be objective factors to justify such a concern." (Deorle v. Rutherford, 272 F.3d 1272, 1281 (9th Cir. 2001))

- Beaver – "possibly" had a weapon under him
- Brooks – could have fled in car
- Brown – beer "tankards" used as weapons

The courts have distinguished the difference between an immediate threat and a possible threat. An immediate threat is clearly articulable and based on facts known to the officer such as : the suspect was armed, the suspect threatened officers, or the suspect attempted to strike an officer. Possible threats are generally based on unknown, but possible circumstances such as: the suspect could have possibly had a weapon under him, the suspect could have fled at any moment, or the suspect was close to a beer mug that he could have used as a weapon.

Instructor Notes: A small sampling of relevant court cases where law enforcement filed motions for summary judgments and rulings taking plaintiffs' versions of the facts as true, the officers uses of the ECDs was found to be objectively unreasonable:

- Beaver v. City of Federal Way, 507 F.Supp.2d 1137 (W.D. Wash. 2007); (qualified immunity upheld by 301 Fed Appx. 704 (Nov. 25, 2008 C.A.9 (Wash.)). Fleeing residential burglar (5 ECD uses, first 3 ok).
- Brooks v. City of Seattle, 2008 WL 2433717 (W.D. Wash. 2008) - Pregnant speeder who refused to sign ticket or get out of the car.
- Brown v. City of Golden Valley, 574 F.3d 491 (8th Cir.(Minn) Jul 22, 2009). Female car passenger, beer tankards at feet, husband (driver) arrested for OMVWI. Case settled for \$200,000.
- Casey v. City of Federal Heights, 509 F.3d 1278 (10th Cir.(Colo.) Dec. 10, 2007). Convicted speeder bringing court file back into courthouse (settled for \$85,000)
- Stych v. City of Muscatine, Iowa, 655 F.Supp 2d 928 (S.D. Iowa Sept. 18, 2009) Fr 12 - "Plaintiff has presented testimony from two witnesses attesting to how important it is for police officers to listen."

4

Module 4: Legal & Case Law

(Usually) Not a Problem ...

Slide 7

If a LEO is justified in using force and:

- The person “is an immediate threat” to LEOs or others, or - the person is trying to flee (and the LEO would be justified in tackling the person),
- Then reasonable ECD use is usually legally justified.

The challenge: to make the best force decisions coupled with excellent reporting

Beaver v. City of Federal Way,

Slide 8

1. The use of an ECD involves the application of force.

(Each use of force on a person that is a seizure is the application of force and must be objectively reasonable.)

2. Each ECD application involves an additional use of force.

(This is true of any use of force.)

Slide 9

3. Multiple ECD applications cannot be justified solely on the grounds that a suspect fails to comply with a command:

Absent other indications that the suspect is an immediate threat or about to flee.

Slide 10

4. Any decision to apply multiple ECD applications must take into consideration whether a suspect is capable of complying with officers' commands.

This would apply to whether a suspect is capable of complying - physically, emotionally, language barrier, mental condition, etc. Also, in the Beaver case, the officers gave conflicting commands.

Instructor Notes: Beaver v. City of Federal Way, 507 F.Supp.2d 1137 (W.D.Wash. 2007); (qualified immunity upheld by 301 Fed Appx. 704 (Nov. 25, 2008 C.A.9 (Wash.)). The Beaver case is an excellent example of where courts are headed in analyzing law enforcement force events.

Bryan v. McPherson

Slide 11

- Not an immediate threat
- Not resisting
- Not a flight risk
- Stopped for traffic infraction
- Officer gave no warning
- Officer did not consider less intrusive options (waiting for backup)
- See the court opinion and Bryan article in the Support Materials/ Legal folder on the training DVD

Bryan v. McPherson, 590 F.3d 767 (C.A.9 2009)

4

Module 4: Legal & Case Law

Multiple ECD Applications

Slide 12

- Is the suspect capable of complying with commands?
 - any decision to apply multiple ECD applications must consider whether suspect is capable of complying with commands.
 - Physically? (Beaver)
 - Mentally (intoxication, schizophrenic, etc.)?
 - Emotionally? (Buckley, Brown)
 - Conflicting commands? (Beaver, Releford)

Buckley v. Haddock, 292 Fed.Appx. 791 (11th Cir.(Fla.) Sep 09, 2008), cert denied May 18, 2009.
Brown v. City of Golden Valley, 574 F.3d 491 (8th Cir.(Minn) Jul 22, 2009).
Releford v. City of Tukwila, CASE NO. C07-2009-RSM (W.D.Wash. 2008).

Where the Courts are Going

Slide 13

Simply non-compliant (without threat):

- Consideration of ability to comply with commands
 - Conflicting commands
 - Ability to comprehend commands
 - Physically able to comply with commands
 - Emotionally able to comply with commands
 - Inability to comply due to trauma

4

Module 4: Legal & Case Law

Where the Courts are Going

Slide 14

Simply non-compliant (without threat):

- Warning(s) before use of force to gain compliance
 - Very low threat – warnings are necessary
 - Adequate opportunity for volitional compliance
 - Must be able to reasonably articulate that warning was understood and could be complied with

Considerations to Avoid ECD Excessive Force Liability

Slide 15

- Make sure that ECD use is within Agency Policy and Training
- Use ECD only to accomplish lawful law enforcement objectives
- Do not use an ECD for punishment
- Use window of opportunity to restrain

— Considerations to Avoid ECD — Excessive Force Liability

Slide 16

- Justify/document every trigger pull/5 sec. discharge—
articulate/document threat/behavior
- Avoid multiple, repeated, prolonged, or continuous exposures
unless necessary to counter reasonably perceived threat(s)
and is justifiable—document your justification
- Avoid intentionally targeting sensitive areas when possible

4

Module 4: Legal & Case Law

— Considerations to Avoid ECD — Excessive Force Liability

Slide 17

- Know your objectives for using force
- Do not use pain compliance if circumstances dictate that pain
is ineffective
- Increase the likelihood of NMI & minimize skin damage by
using probes

— Considerations to Avoid ECD — Excessive Force Liability

Slide 18

- Using force for compliance (when feasible):
 - Give a warning
 - Give adequate time for volitional compliance
 - Verify person is capable of complying
- Prepare clear, complete, unambiguous reports

Resources

Slide 19

- www.ECDlaw.info for more information
- A Use of Force Matrix and Constitutional Timeline are in the Legal module of the instructor manual
- More use of force resource material is in the Support Materials Legal folders on the training DVD

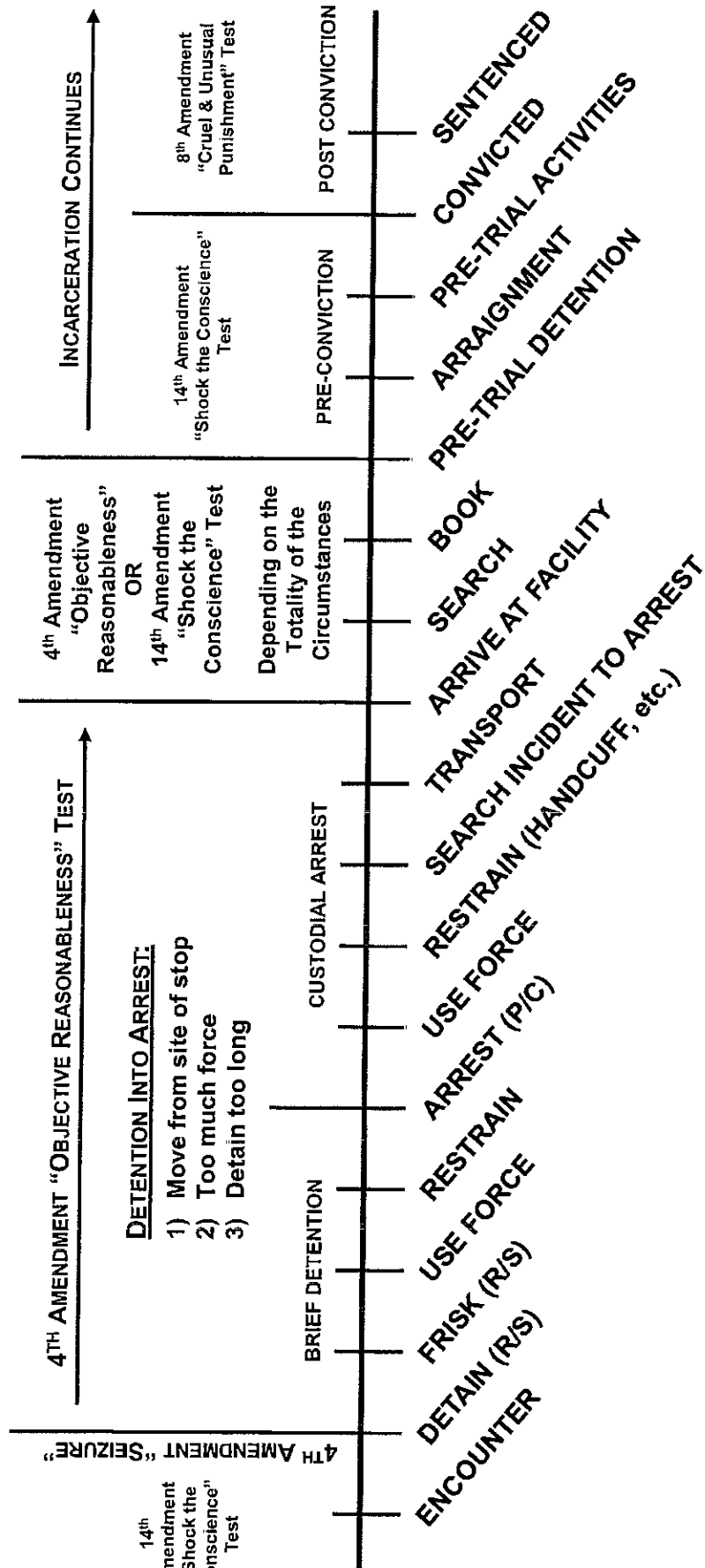
Instructor Notes: There are many more use of force reference documents from LAAW International, Inc. in the Legal folder contained in the Support Materials folder on the training DVD

Conclusion

Slide 20

- Many agencies have seen significant reductions in injuries and excessive force complaints and litigation after deploying TASER ECDs
- Train officers in smart and proper use of ECDs in compliance with judicial guidelines

USE OF FORCE CONSTITUTIONAL STANDARDS TIMELINE



MEDICAL CARE ISSUES – 14TH AMENDMENT "DUE PROCESS"

TEST – "DELIBERATE INDIFFERENCE" TO PERSON'S "SERIOUS MEDICAL NEEDS"

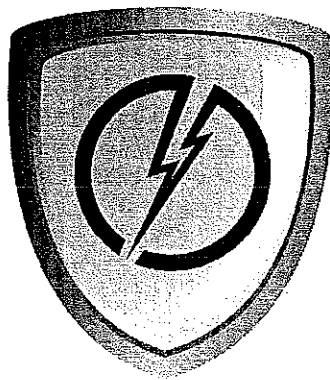
Use-of-Force Recipient Status Matrix

(© Copyright 2010 by LAAW International, Inc. All rights reserved.)

Force Recipient	Free Person		Pre-Trial Detainee	Incarcerated and Convicted Person
	Seized Person - 4th Amendment	Not Seized Free Person Under 4th Amendment		
Constitutional Amendment	4th Amendment	5th Amendment - Federal Officers 14th Amendment - State Officers		8th Amendment
Use-of-Force Standard	Objective Reasonableness Test (Objective Test)	Due Process Clause Shock the Conscience Test		Cruel & Unusual Punishment (Subjective Test)
Qualified Immunity	<i>Pearson v. Callahan</i> , 129 S.Ct. 808, 129 S.Ct. 808, 172 L.Ed.2d 565 (2009); and <i>Saucier v. Katz</i> , 533 U.S. 194, 121 S. Ct. 2151, 150 L.Ed.2d 272 (2001).			
Leading Cases	<i>Graham v. Connor</i> , 490 U.S. 386, 104 L.Ed.2d 443, 109 S.Ct. 1865 (1989); <i>Tennessee v. Garner</i> , 471 U.S. 1, 105 S.Ct. 1694, 85 L.Ed.2d 1 (1985); <i>Brower v. County of Inyo</i> , 489 U.S. 593, 109 S.Ct. 1378, 103 L.Ed.2d 628 (1989); <i>Scott v. Harris</i> , 550 U.S. 372, 127 S.Ct. 1769, 167 L.Ed.2d 686 (2007); <i>Chew v. Gates</i> , 27 F.3d 1432 (9th Cir. 1994).	<i>County of Sacramento v. Lewis</i> , 523 U.S. 833, 118 S.Ct. 1708, 140 L.Ed.2d 1043 (1998); <i>Johnson v. Glick</i> , 481 F.2d 1028 (2 nd Cir. 1973); <i>cert. denied</i> , 414 U.S. 1033, 94 S.Ct. 462, 38 L.Ed.2d 324 (1973); <i>Beil v. Wolfish</i> , 441 U.S. 520, 99 S.Ct. 1861, 60 L.Ed.2d 447 (1979); <i>Rochin v. California</i> , 342 U.S. 165, 72 S.Ct. 205, 96 L.Ed.2d 183 (1952); See also <i>Brothers v. Klevenhagen</i> , 28 F.3d 452 (5 th Cir. 1994); <i>Valencia v. Wiggins</i> , 981 F.2d 1440 (5 th Cir.), <i>cert. denied</i> , 509 U.S. 905, 113 S.Ct. 2998, 125 L.Ed.2d 691 (1993); <i>Neal v. St. Louis</i> , 217 F.3d 955 (8 th Cir. 2000).	<i>Hudson v. McMillian</i> , 503 U.S. 1, 112 S.Ct. 995, 117 L.Ed.2d 156 (1992); <i>Wilson v. Seiter</i> , 501 U.S. 294, 111 S.Ct. 2321, 115 L.Ed.2d 271 (1991); <i>Whitley v. Albers</i> , 475 U.S. 312, 106 S.Ct. 1078, 89 L.Ed.2d 251 (1986); <i>Estelle v. Gamble</i> , 429 U.S. 97, 97 S.Ct. 285, 50 L.Ed.2d 251 (1976); <i>Hope v. Pelzer</i> , 536 U.S. 730, 122 S.Ct. 2508, 153 L.Ed.2d 666 (2002).	
Use-of-Force Test Parameters	<p>- A "seizure" occurs when there is a "governmental termination of freedom of movement through means intentionally applied. <i>Brower</i>, 489 U.S. at 597. The 4th Amendment addresses "misuse of power," not the accidental effects of otherwise lawful conduct. <i>Brower</i>, 489 U.S., at 596.</p> <p>- Are the officers' actions "objectively reasonable" in light of the facts and circumstances confronting them, without regard to their underlying intent or motivation?</p> <p>- Reasonableness is determined by balancing the nature and quality of the intrusion with the countervailing governmental interests.</p> <p>- Reasonableness contemplates (<i>Graham</i>):</p> <ol style="list-style-type: none"> 1. Is the suspect an immediate threat to officers and/or others? 2. Is the suspect actively resisting seizure? 3. Are the circumstances tense, uncertain, and/or rapidly evolving? 4. What is the severity of the crime(s) at issue? 5. Is the suspect attempting to evade seizure by flight (trying to get away)? 	<p><i>County of Sacramento v. Lewis</i> - Police officer does not violate substantive due process by causing death through deliberate or reckless indifference to life in a high-speed automobile chase aimed at apprehending a suspected offender. Holding - in such circumstances, "only a purpose to cause harm unrelated to the legitimate object of arrest will satisfy the element of arbitrary conduct shocking to the conscience, necessary for a due process violation." Two standards:</p> <p>(1) Where a state actor is afforded a reasonable opportunity to deliberate various alternatives prior to electing a course of action, the chosen action will be deemed "conscience shocking" if the action was taken with "deliberate indifference." <i>Lewis</i>, 118 S. Ct. at 1719.</p> <p>(2) In rapidly evolving, fluid, and dangerous situations which preclude the luxury of calm and reflective deliberation, a state actor's action will shock the conscience only if the actor intended to cause harm. See <i>Lewis</i>, 118 S.Ct. at 1720.</p> <p><i>Johnson v. Glick</i> - Four-Part "Shock the Conscience Test"</p> <ol style="list-style-type: none"> 1. The need for the use of force; 2. The relationship between that need and the amount of force that was used; 3. The extent of the injuries inflicted; and 4. Whether the force applied was in good faith or maliciously and sadistically for the purpose of causing harm. 	<p><i>Whitley</i> held that only an "unnecessary and wanton infliction of pain" and "actions taken in bad faith and for no legitimate purpose" are a cruel and unusual punishment.</p> <p><i>Hudson</i> stated that the <i>Whitley</i> standard applies in both prison-riot and non-riot contexts. <i>Hudson</i> also held that all excessive force claims must show malice, sadism, and intent to cause harm.</p> <p><i>Hudson</i> also held the 5th Circuit's "significant injury" requirement was improper under the 8th Amendment analysis.</p> <p><i>Hope</i> - The policy and practice of cuffing an inmate to a hitching post or similar stationary object for a period of time that surpasses that necessary to quell a threat or restore order is a violation of the 8th Amendment.</p>	

Module 5

TASER X26



P r o t e c t L i f e

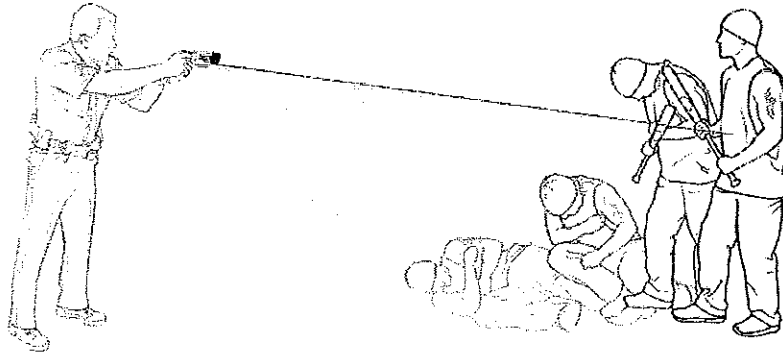
Instructor Certification Course * TASER® X26™ Electronic Control Device

Version 17 Released May 2010

Slide 1

Electronic Control Devices (ECD's) are designed to use propelled wires or direct contact to conduct energy to affect the sensory and/or motor functions of the nervous system.

The X26 is a software upgradable, ECD manufactured by TASER International, Inc.



5

Module 5: TASER X26

Electrical

Slide 2

- Peak arcing voltage: 50,000 V
 - **M26 peak voltage across the body– 5000 V**
 - **X26 Peak voltage across the body– 1200 V**
- Low average current: M26 & X26 < 0.004 A
- Energy stored in device per pulse:
M26 = 1.76 joules X26 = 0.36 joules
- Energy delivered per pulse:
M26 = 0.5 joules X26 = 0.07 joules
- External cardiac defibrillators typically deliver 150-400 joules per pulse

Instructor Notes: It's not the volts that are dangerous; it's the amps that determine safety

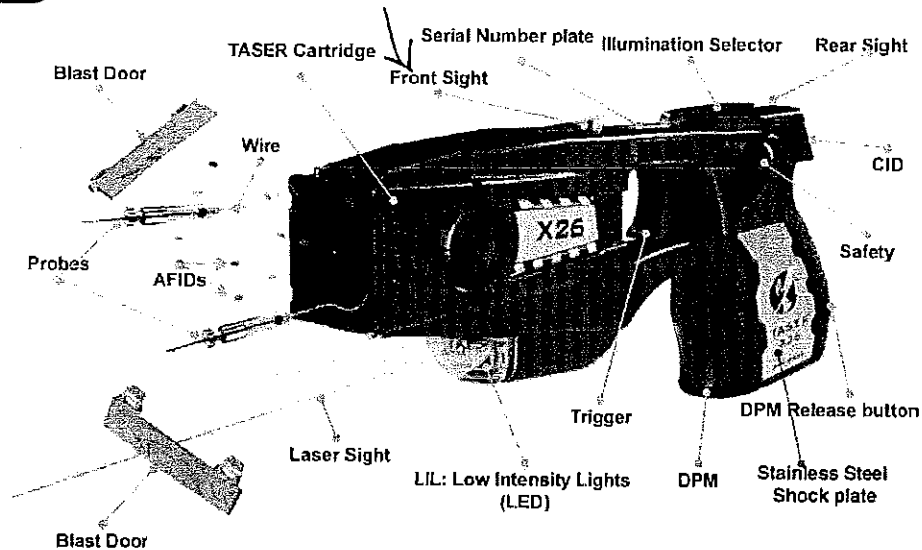
- The electrical output of the TASER X26 and M26 ECDs is 50,000 volts. The voltage may seem high, but the average current on both systems is well below dangerous levels
- ADVANCED TASER M26 ECD output is 3.6mA average current (0.0036 amps) The X26 ECD output is 2.1mA (0.0021 amps).
- The high peak arcing voltage of 50,000 volts only occurs when the arc is required to jump a gap such as between the electrodes on the end of the M26 or X26 ECDs, or when a probe lodges in loose clothing and must jump the gap to the body. When traveling across the human body, the peak voltage drops to 5000 V for the M26 ECD and 1200 V for the X26 ECD. Reports that the TASER ECDs send 50,000 volts through the body

Test

TASER X26

Constructed of impact resistant sonic welded polymer.
Mass = 7 ounces.

Slide 3



The TASER X26 ECD was released in May 2003 and is the 4th generation ECD. It is constructed of impact resistant polymer and weighs 7 ounces. Let's look at the nomenclature. Starting on the front we have the TASER Cartridge, the probes, wire, blast doors and AFID- Anti-felon identification tags. On the X26 ECD, moving front to back, the front sight, serial number plate, illumination selector, rear sight, CID- Central information display. There is the ambidextrous safety switch, the Digital power magazine or DPM, DPM release button, Stainless steel shock-plate, trigger, low intensity lights, and the laser sight. The X26 ECD is available in black and yellow colors.

Trigger Operation

Slide 4

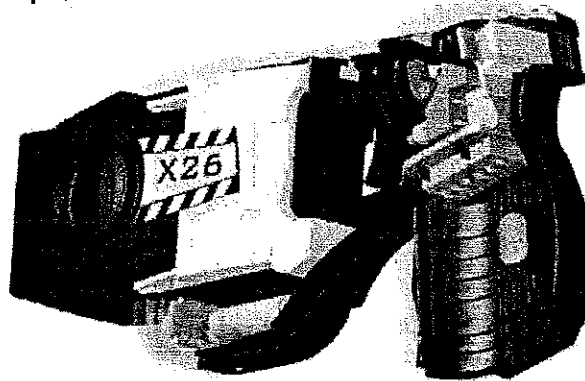
- Single trigger pull and release discharges an electrical charge for a 5-second cycle
- Shift the Safety Switch down (SAFE) to stop a discharge (e.g., if accidentally discharged)
- Holding the trigger continuously beyond the 5-second cycle will continue the electrical discharge until the trigger is released. (The discharge will cease once the trigger is released after the initial 5-second cycle.)

Pulling the trigger initiates a 5-second discharge cycle. The cycle may be extended beyond 5 seconds by keeping the trigger depressed. To stop a discharge cycle, for example an accidental discharge, shift the Safety Switch down to the SAFE position. Holding the trigger continuously beyond the 5-second cycle will continue the electrical discharge until the trigger is released. In this instance, the discharge will cease once the trigger is released.

Digital Pulse Controller (DPC)

Slide 5

- Digitally controls pulse rate
- Consistent performance
 - 4°F to +122°F
 - 20 C to +50 C
- 5-second burst
- 19 Pulses per second



Pulling the trigger initiates a 5-second discharge cycle. The cycle may be extended beyond 5 seconds by keeping the trigger depressed. To stop a discharge cycle, for example an accidental discharge, shift the Safety Switch down to the SAFE position. Holding the trigger continuously beyond the 5-second cycle will continue the electrical discharge until the trigger is released. In this instance, the discharge will cease once the trigger is released.

Instructor Notes: The Digital Pulse Controller (DPC) is an internal circuit including the Microprocessor of the X26 ECD and various support hardware. When the X26 ECD is fired, the DPC measures the time between each shaped pulse discharged from the ECD. The DPC then regulates the power throughput of the pulse generator to maintain a constant pulse rate. All pulse rates are approximate and may vary slightly. In previous generation pulse energy ECDs such as the M26 ECD, the pulse rate of the ECD would vary greatly depending on battery conditions. Particularly, in colder weather, the pulse rate could slow dramatically as battery performance decreased. The DPC in the X26 ECD adjusts power consumption to compensate for changes in environmental conditions in order to maintain a more constant pulse rate, and therefore consistent incapacitation performance, across a broad temperature range from -4°F (-20 C) to +122°F (+50 C). The pulse rate may slow slightly when temperatures drop below freezing, particularly during multiple discharges.

For X26 ECD software version 15 and higher DPMs, the DPC delivers 19 pulses per second for the full 5-second cycle. This allows for effectiveness in cases where there are clothing disconnects or other factors that can reduce the effectiveness of the X26 ECD.

All X26 ECDs and DPMs shipped after September, 2004 are programmed with a constant 19 pulses per second cycle.

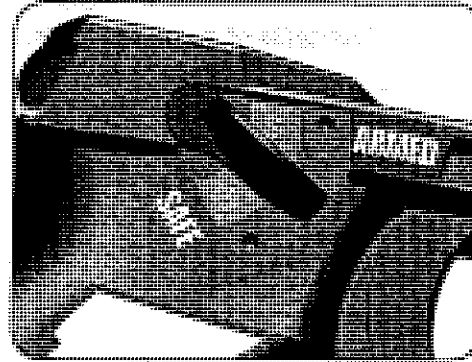
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Module 5: TASER X26

Ambidextrous Safety

Slide 6

- Safety Switch Down
 - (SAFE)
 - Safety Switch Up
 - (ARMED)
 - Activates CID and selected illumination



When the safety switch is down, the ECD is in safe mode. The X26 ECD displays a green "S" for safe when in safe mode (the M26 ECD has no marking) When the safety switch is shifted up, the ECD is armed and will fire when the trigger is activated. The X26 ECD displays a red "F" when in armed mode.

X26: When armed, the laser and LED illuminators turn on (depending on illumination status) and the Central Information Display shows the calculated percentage of battery life for 5 seconds then shows two dots.

Ambidextrous Safety

Slide 7

- The ambidextrous safety switches do not operate independently of each other
- Do not block the safety switch on one side of the X26 ECD while attempting to move it on the other side.
- This can break the safety switch and disable the ECD

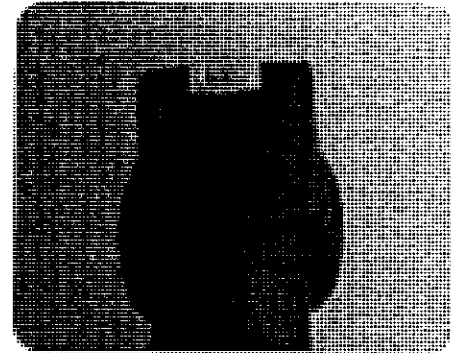
The ambidextrous safety switches work together and not independently of each other. Remember not to block one side of the switch while attempting to move it on the opposite side. This can break the switch and disable the device.

Instructor Notes: ECDs with broken safety switches must be returned to the manufacturer for repair.

CID Display

Slide 8

- 06..10..04--00..01..27..01..14--26—20
- (First 3 numbers) Warranty expiration yr-mo-day
(As of May 11, 2009 warranty expiration does not show on CID and will display as three sets of "00")
- -- (separator)
- (Next 5 numbers) Yr-Mo-Day-24hr-Mn (GMT)
- -- (separator)
- (9th number) Temp in Celsius
- -- (separator)
- (last number) Software revision
- Unit will display battery percentage for approximately five seconds when in fire mode, then will display two illuminated dots.



When the DPM/XDPM is inserted into the X26 ECD, and it's not a newer program version, you will see the CID flash a sequence of numbers. The numbers are separated by dots or dashes. Dots separate numbers in the same group and dashed separate each group. The first three sets of numbers will be the warranty expiration of that ECD. With the new warranty program, implemented in May 2009, the first three sets of numbers will be zero's. Then you will see two dashes. The next 5 sets of numbers will be the current date and time of the ECD. This will show as Greenwich Mean Time. The 9th set of numbers will be the internal temperature of the ECD and the last set of numbers will be the current version of programming on that X26 ECD. Note the number is showing you the programming on the device and not the DPM that's in the device.

Instructor Notes: TASER changed its warranty process for the X26 ECD and it became effective May 11, 2009. Warranty information is now associated with date of purchase. X26 ECDs purchased after May 11, 2009 will show 00..00..00 for first three sets of numbers. For warranty information go to www.TASER.com. The remainder of the boot up sequence does not change.

System diagnostics

When DPM Loaded

1. Warranty expiration date: YR, MO & Day flash
2. Current date & time: YR, MO, Day, 24 HR & Minute flash
3. Current Celsius internal temperature
4. Software revision level

Ensure the safety switch is in the down (SAFE) position & unload cartridge. Remove and reinsert the DPM

Code sequence

Warranty expiration

"--" Separator

Current system time (GMT)

YY, MM, DD, HH, MM

"--" Separator

System internal; temperature

-99° to +99° Celsius

Flashing number is negative

Software revision number

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Version 17 • 5/10 7

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Module 5: TASER X26

CID Countdown

Slide 9

- Counts down the cycle 05,04,03,02,IIII,00 (with software version 20 or higher)

When the trigger is pulled, the X26 ECD will countdown the cycle. Notice the count-down shows 05, 04, 03, 02, 1111, 00

The 1111 was introduced with Version 20 and remains in current versions.

Instructor Notes: One of the features built into the X26 ECD is the ability to upload new operating software as upgrades are developed.

Our engineers recently discovered that illuminating the digit "01" during the firing countdown can cause the right digit on the Central Information Display (CID) to fail. This does not affect the functionality of the ECD. However, it is non-repairable and the ECD must be replaced when this occurs. When all other digits (05, 04, 03, 02, 1111, 00) are displayed, there are no fewer than four segments illuminated on each side of the CID. However, when "01" is reached, there are only two segments illuminated on the right digit. We were able to determine that if more digits were illuminated, failure of the component regulating the right digit of the CID was significantly reduced.

On June 11, 2007, TASER released version 19 of the X26 ECD software. All X26 ECDs, Digital Power Magazines (DPMs), XDPMs, and TASER Cams shipped after this date will be programmed to version 19 or higher. Effective with version 19, the CID will display "IIII" instead of "01." The new countdown sequence will be, "05, 04, 03, 02, IIII, 00."

Illumination Button

Slide 10

- With the safety switch in the down (safe) position, use finger to hold the illumination button down for approximately two seconds to bring up display (Do not use objects like pens, paper clips or knives as this can result in switch breakage or the switch could get stuck)
- LO- Laser Only Mode
- OF- Flashlight Only Mode
- LF-Laser/Flashlight Mode
- OO- Stealth Mode (no light/no laser and CID is dim)

Users can select the operation of the lights and laser via the illumination selection button. With the X26 ECD in the SAFE position, press and hold the illumination selector. Use your finger. Do NOT use a pen, paper clip etc as this can break the switch. Toggle through the four different selections. As you can see the different options light as they are actuated. LF is laser and Flashlight, LO is Laser only, OF is only flashlight and OO is stealth, no light and no laser and the CID goes dim. Once you select your setting let it turn off then when you arm the ECD it will activate the setting you selected.

Instructor Notes:

1. Place the safety switch in the down (SAFE) position, remove the TASER Cartridge and aim the X26 ECD in a safe area (such as toward the ground).
2. Press and hold the illumination selector for approximately 2 seconds until the CID display illuminates
3. Press and release the illumination selector to toggle through the four available settings until the setting you desire is designated on the CID. The codes are listed below:

LO: Laser Only will illuminate

OF: Only Light will illuminate

LF: Laser and Light both illuminate

OO: Neither laser nor light will illuminate. The CID will go dim on this mode.

The X26 ECD will display the selected mode on the information display as well as activate the selected features for 5 seconds, then revert back to the safe mode.

It is important to note that the laser shuts off during the TASER discharge cycle to conserve energy

NOTE: it is important to inform students not to use an object on the switch (pen, paper clip, knife) when toggling through the various settings. Using anything other than your finger could result in the switch breaking or getting stuck in the handle.

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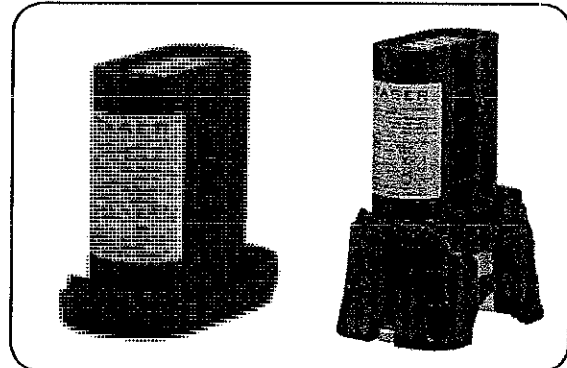
Module 5: TTASER X26

Batteries: DPM/XDPM

Test question

Slide 11

- 2 x 3 volt lithium energy cells
- Provides up to 195 5-second cycles at room temperature
- Digital memory (% life remaining)



The power source for the X26 ECD is the DPM- Digital power magazine. The DPM contains two 3-Volt Lithium energy cells. This provides up to 195 – 5 second cycles at room temperature. The XDPM, shown here on the right, provides a location to secure a second cartridge allowing the user to have a spare cartridge readily available.

Instructor Notes: The battery lasts longer on the shelf and performs better in colder temperatures than alkaline or NiMH rechargeable batteries.

At room temperature, the DPM will provide up to 195 5-second firing cycles for X26 ECDs programmed with version 15 or higher software. The longevity will depend on the number of firings in colder weather versus warm weather and other factors. The DPM will use more energy in colder weather to provide the consistent pulse rates than it does when in warmer temperatures.

The DPM stores the calculated percent of life remaining digitally and can be removed and used in other X26 ECDs and still retain its remaining power.

DPMs purchased after May 2006 will have a soft gasket around the base of the DPM for enhanced reliability of maintaining connection. These DPMs must be inserted solidly when uploading new software to avoid a disconnect and software corruption. Be sure the DPM release button pops out to indicate that the DPM is fully seated.

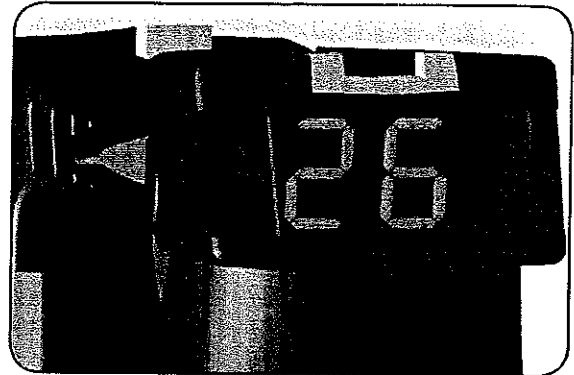
Caution: The internal time and date settings on the X26 ECD can be reset if the DPM is removed for 4 hours or more. Always store the X26 ECD with the DPM inserted to maintain dataport integrity.

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DPM Digital Memory

Slide 12

- Digital memory stored in DPM contains calculated percentage value of remaining battery life
- X26 ECD interprets and displays this value on the CID



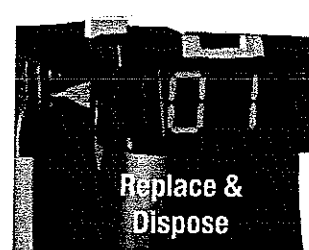
Each DPM also has a circuit board which retains the approximate battery percentage remaining. This feature allows the user to switch a DPM or XDPM to another X26 ECD and it will show the correct approximate remaining battery strength.

Instructor Notes: The X26 ECD does not measure the actual power remaining in the DPM. Rather the remaining battery strength is a mathematical calculation based on discharge history, operating temperature, and the time of operation of the low-intensity lights and laser. A safety feature has been programmed into the X26 ECD to automatically write the remaining battery strength to 0 if there is a communication problem between the X26 ECD and the DPM. If a DPM suddenly changes from a relatively high strength to 0, contact TASER Customer Support or a certified TASER Technician.

DPM Replacement / Upgrading

Slide 13

- Replace DPM when % remaining is $< 20\%$
- Use for training until 1% remaining
- Dispose at 1%
 - Caution: Continued use at 1% or lower could cause damage to the X26 ECD



Use the DPM/XDPM from 99%-20% in the field. When it reaches 20% remove the DPM/XDPM and use in Training. When it gets to 1% dispose of according to local disposal laws.

Instructor Notes: When the DPM gets below 1%, the Lithium Energy Cells are going dead. At this point, the power level will drop below the minimum level at which the microprocessor will run. This is called a brownout. It is similar to unplugging your desk-top computer from the wall without shutting it down properly.

DPM Cautions

Slide 14

- X26 ECD must be stored with DPM/XDPM inserted at all times
- Failure to do so may result in loss of time and date settings, software corruption, and/or X26 ECD failure
- This also applies to sending in an X26 ECD to TASER for repairs or replacement
- If DPM/XDPM is left out for an extended period of time...
- Software configurations in the X26 ECD may be corrupted and date/time will be reset
- Refer to online troubleshooting guide

The X26 ECD must be stored with the DPM/XDPM inserted at all times. Failure to do so may result in loss of time and date settings, software corruption and/or X26 ECD failure. This also applies to shipping an X26 ECD back to TASER for repair. If the DPM/XDPM is left out for an extended period of time the software configurations may be corrupted and the date/time will be reset.

Instructor Notes: If an X26 ECD is returned to TASER for repairs or inspection, it must be sent with the DPM in it to avoid damaging the X26 ECD's internal programming.

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Module 5: TASER X26

DPM Cautions

Slide 15

- **Caution:** When a DPM/XDPM is replaced with a DPM/XDPM that contains a newer software version, a programming upgrade will occur
- A "P" is displayed in the CID during the upgrade process
 - Process takes approximately 45 seconds for V-20 or older. V-21 programming takes 10-12 seconds, V22 (released March, 2009) takes 6-8 seconds to upgrade.
 - **During this time the X26 ECD must not be activated!**

When a DPM/XDPM is replaced with one that contains a newer software version, a programming upgrade will occur. A "P" is displayed on the CID during the process. This programming process takes approximately 6-8 seconds with the latest X26 ECD programming which is V22.

Caution: CAUTION: DO NOT REMOVE A NEW DPM OR XDPM OR MOVE THE SAFETY SWITCH INTO THE UP (ARMED) POSITION DURING THE PROGRAMMING MODE. When a new DPM/XDPM with updated software is inserted into the X26 ECD for the first time, the CID will show the letter "P" to indicate that the X26 ECD is updating the software. (A brand new DPM/XDPM with a higher version number indicates a new software revision).

Leave it alone when a P is shown

Test question

DPM Upgrading

Slide 16

- After programming has completed, the X26 ECD will start boot up sequence
- Caution: Removal of DPM/XDPM during "P" state in the initial boot-up WILL corrupt the X26 ECD software
- CID will display a code of "E", "H" or will be blank and the X26 ECD must be returned to the factory

CAUTION: DO NOT remove the DPM/XDPM or activate the X26 ECD during the programming sequence. If the sequence is interrupted, an "E" or "H" will appear on the CID. This means the programming was interrupted and the X26 ECD will have to be returned to TASER for re-programming.

Instructor Notes: Once the X26 ECD software is properly installed, the CID will then go through the normal boot up sequence indicating the date, temps, etc. Removal of the DPM/XDPM or arming the X26 ECD during the "P" state (programming) will corrupt the software. If the software gets corrupted, the X26 ECD will not function properly and must be sent back for factory service. Note: Removing the DPM/XDPM or arming the X26 ECD during the normal boot up mode will not harm the TASER X26 software.

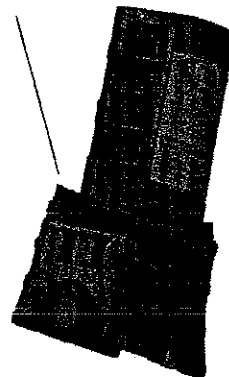
Starting in 2006, DPMs, XDPMs, and TASER Cams have a gasket around the base. This is to help seal the DPM well and prevent moisture and foreign material from entering. When uploading new software to the X26 ECD, it is critical that the DPM, XDPM or TASER Cam be inserted firmly so that it locks in place. Otherwise, contact may be lost during the programming phase and the X26 ECD software will be corrupted, necessitating shipment of the unit back to the factory for reprogramming. If the DPM, XDPM or TASER Cam is not locked in place during operation, contact may be lost and the device will lose power.

Once an X26 ECD has been programmed with new software, the older version DPM may be reinserted and used in the field until its strength decreases to 20%. The X26 ECD retains the latest software revision programmed. It will not revert to older software when the older DPM is reinserted.

DPM/XDPM & TASER Cam Gaskets

Slide 17

- Keeps debris out
- Must be inserted firmly
- Failure to do so can result in disconnect



The addition of the gasket to the DPM/XDPM and TASER Cam will help keep dirt and debris from entering the X26 ECD DPM well. This should help prevent disconnection of the battery from the X26 ECD as well as prevent the contacts of the X26 ECD and DPM from getting dirty/corroded. When inserting a DPM/XDPM or TASER Cam into an X26, insert it firmly into the ECD, compressing the gasket and allowing the DPM release button to fully "pop" out. If the DPM/XDPM or TASER Cam is a newer programming version and the operator fails to firmly insert the DPM/XDPM or TASER Cam, there will be a disconnect and the X26 ECD programming may be interrupted resulting in an "E" error code. The ECD will have to be returned to TASER for reprogramming. Additionally, failure to securely lock the DPM/XDPM or TASER Cam into the X26 ECD could result in a disconnect prior to or during a TASER cycle in the field, resulting in a loss of power.

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X26 ECD: Important Tips

Slide 18

- Test question*
- System date & time is always GMT
 - When you insert a DPM for system boot up, it will display GMT time and date
 - X26 ECD download software will compensate based on computer time zone settings
 - System “sleeps” after being armed for 20 minutes
 - Helps avoid accidental battery depletion
 - CID screen will go blank and will not fire.
 - Re-arm by flipping safety switch down and then flipping back up.
 - This includes an x26 ECD with TASER Cam installed
 - The TASER Cam will stop recording when the X26 ECD goes into “SLEEP” mode (20 minutes)
 - It will start recording when the X26 ECD is reactivated
 - **X26 ECD MUST BE STORED WITH DPM INSTALLED!**

Remember the system date and time is always shown in GMT. The download program compensates for your time zone to show local date and time.

The X26 ECD will “sleep” after being armed for 20 minutes. This helps avoid accidental battery depletion. To arm the device again, simply cycle the safety. Remember If you are using a TASER CAM the Cam will stop recording when the X26 ECD goes into sleep mode until re-armed.

And remember always store the X26 ECD with a DPM inserted.

Instructor Notes: It is important to remember that the X26 ECD always tracks Greenwich Mean Time (GMT). When you download records, the personal computer software will convert the time to local time. However, when you load the DPM, the X26 ECD will display the current system time in GMT. This can be confusing, because the date may differ as well.

For example, when it is 6:00 pm in Arizona on August 12, GMT time is 1:00 am on August 13. Tell students what the difference is between local time and GMT.

For more info on Greenwich Mean Time see: <http://greenwichmeantime.com>

Also, the original owner's manual of the X26 ECD described that the X26 ECD would display “RA” on the display when the system went to sleep. This function was eliminated in order to save battery drain (displaying “RA” unnecessarily consumes battery life). Hence, when the ECD goes to sleep after 20 minutes in the armed mode, it does not illuminate the display.

Caution: It is critically important to store the DPM power supply inside the X26 ECD.

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Module 5: TASER X26

Spark Test

Slide 19

- A daily spark test should be conducted once every 24 hours or prior to the start of your shift for individually issued X26 ECDs.
- One spark (1/19th of a second) is adequate. However, this is not a practical duration. As long as the officer sees a visible spark between the electrodes, it is not necessary to extend the duration. In most cases, less than one second.
- The reason for the spark test is:
 - To check that the ECD is sparking.
 - To check the battery's performance.
 - There are components in the high voltage section of some older X26 ECDs that are more reliable when energized ("conditioned") on a regular basis.

Instructor Notes: Our primary concern is officer safety. While it is not possible to guaranty that any ECD will function properly, we continually strive for the highest level of quality and reliability. However, nothing can replace an operational check of the ECD for functionality and possibility of an ECD failure during field deployment. We are also sensitive to the cost associated with the use of the DPM (Digital Power Magazine) and have tried to minimize the test requirements without compromising officer safety.

The only way to determine the proper functioning of all components is to conduct a daily spark test. There is no display or other method to verify proper ECD operation other than seeing the actual spark between the electrodes.

The X26 ECD is a highly sophisticated electronic device. We build the ECDs to be robust. However, there are many times that they are subject to extreme conditions in the field including dropping, exposure to significant moisture, etc. Any of these factors could damage an internal component without any external indication. Conducting a daily spark test helps to check the proper operation of components.

While the CID readout of battery life is accurate, there is a possibility that the battery could be discharged outside the ECD (e.g., if the DPM is improperly stored the metal contacts may be shorted out) and this would not affect the displayed percentage, even though the DPM is unintentionally depleted. The daily spark test is to assist in adequately confirming DPM strength.

TASER requires a spark test prior to each shift or a minimum of once per work day. It is not necessary to spark test the ECD on days off, as long as a spark test is conducted prior to the start of the next shift.

There are several possibilities that can result from the failure of an internal component of the ECD, including but not limited to: (1) complete failure of the ECD including no spark and no LASER or LED; (2) the LASER and/or LED function properly, but the ECD fails to spark; (3) when the trigger is pulled, the countdown on the CID is normal, but the ECD delays a second or more before beginning to spark; or (4) partial power or low pulse rate.

The life expectancy of the DPM is based primarily on the number of pulses. If the spark test is conducted for one second or less per day, the DPM would not have to be replaced for approximately 3 years; however, upgrade the software as available.

If the ECD does not pass the spark test, contact TASER for return authorization. The customer support number is 800.978.2737. Also, we have a troubleshooting guide on our website at www.taser.com. Click on the technical support icon for a link to the troubleshooting guide. This may help correct some problems without the need to return the ECD to the factory.

Departments should review ECD data downloads to review officers turning off their ECD after one second during the spark test and transferring this practice to the field. Some departments have officers do their spark test while holding the ECD in their non-dominant hand facing downward but still maintaining a visual on the spark. This method helps minimize bad muscle memory. Others require the supervisor to conduct all spark tests.

Spark Test

Slide 20

When conducting your daily spark test, always follow agency protocol and remember these important steps:

- Unholster and the ECD and remove the cartridge
- Point the ECD in a safe direction
- Put the safety switch in the up (ARMED) position
- Pull the trigger
- Visually as well as audibly inspect the arc
- If the ECD does not function properly, DO NOT take it into the field. Turn it in to the appropriate person for repair or replacement
- If the ECD functions properly:
 - Put the safety switch in the down (SAFE) position
 - Load and holster the ECD

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Module 5: TASER X26

X26 ECD Dataport

Connection Kits Sold Separately

Slide 21

- It will Record 2000 incidents Test question*
- X26 ECD USB Dataport
 - Time, date, duration, temp, battery status of each firing (last 2,000)
 - Connection protected inside DPM slot
 - Encrypted data files
 - Date range downloads
 - USB plug & play



The download DPM allows you to download your X26 ECD via USB cable to any computer loaded with the X26 download software or to Evidence.com. The download connection is protected inside the DPM slot and the data is encrypted for security. The download will show the last 2000 firings which is the amount the X26 ECD stores.

X26 ECD Dataport: The X26 ECD has a dataport function that stores the time and date when it was fired. This data helps to protect officers from claims of excessive use of force by providing documentation of the time and date for each firing. The dataport also provides law enforcement with a management tool to track usage patterns, prevent misuse, and develop ongoing training programs.

The X26 ECD improves upon the M26 ECD dataport system:

USB Plug and Play: The X26 ECD interface uses a USB (Universal Serial Bus) "plug and play" adapter (sold separately) to connect to any Windows® 98SE, Windows® 2000, or Windows 2007 or Windows® XP computer. Whereas the M26 ECD used a serial interface that required users to deal with Com Port errors and other issues, the simplicity of the USB makes using the dataport an easier, faster process.

Interior data connection: The dataport on the M26 ECD used an Ethernet style connector on the outside of the ECD. This required a separate rubber plug to keep dirt and moisture from penetrating into the ECD. On the X26 ECD, the dataport interface is inside the DPM compartment and can only be accessed by removing the DPM. This reduces the risk of particulate matter and moisture penetrating to the operating circuits of the X26 ECD.

Automatic Daylight Savings and Time Zone Calculations: The X26 ECD is programmed to GMT at all times. However, the conversion to local time, including adjustments to daylight savings time, are all computed in the PC based software. There is no need to program the ECD to local time or to reprogram the ECD to day light savings time. The X26 ECD data download reports show the time and date in both GMT and local time. If the X26 ECD time is ever lost or reprogrammed, the firing log will show the time change information in the fire log data.

Secure .x26 data files: The data downloads are saved in encrypted data files that are secure from tampering. This preserves the admissibility of X26 ECD dataport download reports for court admissibility. The X26 ECD will store the last 2000 most recent firings in its memory.

Duration of discharge and temperature: The X26 ECD dataport stores not only the time and date of each discharge, but also the duration of each discharge and the system internal temperature at the time of discharge. If the trigger is pressed again and held down during the first 5-second discharge, this will be counted as one firing period. If the first firing is allowed to stop before the trigger is pressed again, the log will show two separate firings.

NOTE: The time recorded on the download log on the X26 ECD indicates the end of the cycle.

Download

Test question

Slide 22

TASER X26 Download

X26 DATAPORT DOWNLOAD

Serial Number of X26: XCE-000056 Model #: X26

Date of Download: 04/04/07 09:05:29

Local Time Calculated In: US Mountain Standard Time

Date Range Downloaded: All Data

Current PC Time (Local): 04/04/07 09:06:22

Current X26 Time (Local): 04/04/07 09:05:10

Time Difference: 00 Hours 09 Minutes 04 Seconds

RECORDED FIRING DATA

SEQ#	GMT Time	Local Time	Duration [Secs]	Temperature [deg. C]	Battery %
0003	11/30/99 00:01:11	11/29/99 17:01:11	1	21	99
0006	07/06/06 16:47:53	07/06/06 09:47:59	1	21	98

TIME CHANGE RECORD

SEQ#	GMT TIME	Local Time	Change Type
0001	05/22/05 20:41:45	05/22/05 13:41:45	FROM
0007	05/22/05 20:41:46	05/22/05 13:41:44	TO

Zoom Out Print Preview Print Fullscreen Record Exit

Here is an example of an X26 ECD download. The data provides you with the sequence number, date and time of the firing, in GMT and local time, duration of the cycle, the internal temperature of the ECD, the remaining battery strength and any time changes made to the ECD. From here you can zoom out to view all the firings and time changes. You can also save the record or print it out as a pdf file. You can select all the data to download or a specific date range.

Instructor Notes: Remove the cartridge and spark test the ECD prior to download to confirm current time as relative point of reference

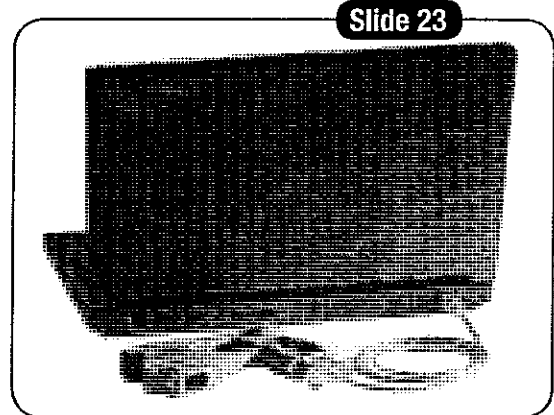
CAUTION: If you return a damaged X26 ECD: DOWNLOAD & SAVE data port info in case that X26 ECD is not returned to you and the data on it is called into question or litigation in the future

X26 ECD Download using EVIDENCE.COM

- Must use EVIDENCE SYNC through EVIDENCE.COM to download the X26 ECD

You can also download your X26 ECD using EVIDENCE.COM-Lite. Evidence.com-lite is a free version of Evidence.com for downloading the X26 ECD, and TASER Cam. Go to www.Evidence.com for information on obtaining the free download software, EVIDENCE.COM-Sync, which is required to download the devices.

Instructor Notes: To download the X26 ECD to EVIDENCE.COM, you must use EVIDENCE SYNC through EVIDENCE.COM.



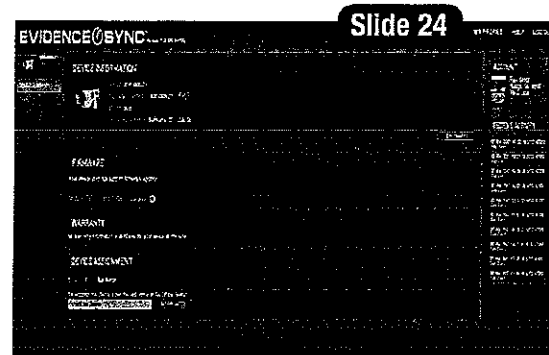
Slide 23

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Module 5: TASER X26

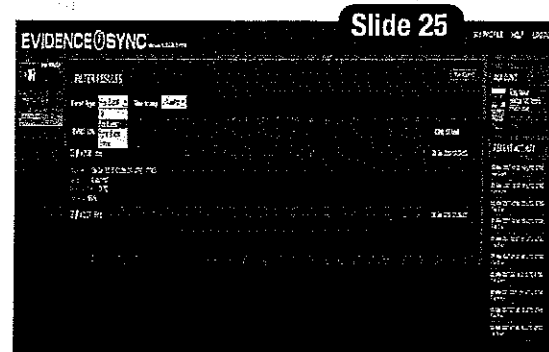
X26 ECD Dataport

Here is a screenshot of the main page. This shows detailed information on the X26 ECD like, the serial number, the latest programming on the ECD as well as the warranty status and all the firings which are listed on the right column. From here the operator can view the firing records by clicking on the Event log.



Slide 24

Here is a screen shot of an X26 ECD firing log. From here you can select this event to see the details or you can filter the events from a specific date range. You may also filter time sync events



Slide 25

X26 ECD Download Maintenance

Slide 26

- Recommend conducting a quarterly download and clock reset

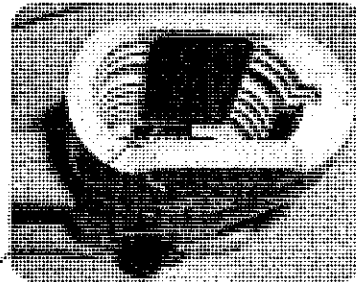
TASER recommends conducting a quarterly download of your X26 ECD. This helps keep the date and time correct on the ECD.

Instructor Notes: The internal time clocks of both the M26 ECD and X26 ECD may gain or lose several seconds or minutes a month. How much time is gained or lost is based in large part on the operating levels of several other components in the ECD. If ECDs go several months or years without a download, the internal clock could be off by over an hour. This would result in less accurate download information. By conducting a periodic download, the internal clock is reset to the download computer's time. Therefore, it is critical that the download computer is set to the correct time and time zone. This is a policy issue to be determined by each department. The periodic download is a recommendation only.

Attaching Serial Numbers to ECDs

Slide 27

- Do not use metal tags, they are conductive and could cause the energy to be redirected back to the user or ECD
- Do not use a vibrating etching machine. This could compromise the integrity of the plastic and introduce foreign material into the ECD's internal components.;
- Recommend: Apply paper or plastic labels with the serial number or write the serial number on the TASER ECD in permanent ink
- Contact customer service at TASER for custom engraving



NO!



Do NOT attach metal tags to any ECD. These are conductive and could cause energy to be redirected towards the user or unit.

Also do not use a vibrating etching machine as it can compromise the integrity of the plastic and introduce foreign material into the ECD's internal components. TASER recommends applying a paper or plastic label with the serial number to the ECD or you can use a permanent marker. You can also contact TASER for custom engraving.

Attaching Serial Numbers to ECDs: All TASER brand ECDs are marked with a serial number prior to shipping. Several agencies, as a matter of policy, attach supplemental serial numbers to all equipment. The application of these supplemental serial numbers can affect the ECD depending on how and where they are applied.

Many departments add a metal serial number plate to the M26 ECD and the X26 ECD (see photo). Since metal is such a conductive material, it can direct the ECD's electrical current away from the front of the ECD and toward the metal serial number plate. This can shock the operator and damage the ECD. Metal serial number plates should not be applied to either the M26 ECD or X26 ECD.

Some agencies have used vibrating engravers to engrave a serial number on the M26 ECD and X26 ECD. The vibration can damage the internal components. The engraving tool can also penetrate the ECD shell. This also can lead to internal damage. TASER recommends that departments not engrave any TASER ECDs.

If your department is required to apply a separate serial number to a TASER ECD, we recommend that you apply a paper or plastic label with the serial number on it or write the serial number on the TASER ECD in permanent ink.

Forg 1520

ECD Radio Interference

Slide 28

- Interference from other electronic transmission devices in close proximity to the TASER ECD could interfere with the proper operation of the TASER ECD
- Place the TASER ECD several inches away from other electronic devices
- The safety switch on a TASER ECD should be placed in the down (SAFE) position whenever it is immediately adjacent to other electronic equipment

It has been learned that radio transmissions may interfere with the proper operation of an ECD. This situation can occur when the safety on the ECD is in the up (ARMED) position, the ECD is within a few inches of the radio antennae, and the radio is keyed (transmitting).

These circumstances can cause the ECD to discharge without pulling the trigger, or can stop the TASER cycle if the radio is keyed after the trigger on the ECD is pulled.

This situation has only been observed when using 400 MHz radios.

Testing is continuing on the possible effects of radios transmitting at different MHz levels and other equipment that transmits radio waves on ECDs.

ECDs that are holstered on an officer's belt near a portable radio should always be holstered with the safety switch in the down (SAFE) position.

Officers should avoid holding a radio next to an ECD and transmitting when the ECD has been discharged.

5

Module 5: TTASER X26

ECD Warranty

Slide 29

- One Year Standard
 - Standard electronic warranty against manufacturer's defects
- M26 ECD and TASER Cam warranty begins on date of receipt
- X26 ECD warranty begins on date of receipt*
 - *Purchased after May 11th, 2009
- TASER manufactured accessories, to include cartridges, DPM/XDPM, CDPM, etc., are covered under a 90-DAY warranty from date of receipt

X26 ECDs have a 1 year standard warranty against manufacturers defects. This warranty begins on the date of receipt. Accessories like DPM/XDPM's have a 90 day warranty. For WARRANTY TERMS AND CONDITIONS: go to www.TASER.com or contact TASER at sales@taser.com.

For X26 ECD WARRANTY TERMS AND CONDITIONS: See owners manual or contact TASER at: sales@taser.com.

Extended Warranty

Slide 30

- One and Four Year Extended Warranties
 - X26 ECD and M26 ECD extended warranties must be purchased within the 1-year limited warranty period*
 - *If extended warranties are purchased AFTER the point of sale you must provide TASER with the serial numbers of all units associated with extended warranties.
 - Extends the warranty out to 2 and 5 years from the date of receipt of unit

Extended warranties are available. Please contact TASER sales for more information.

X/M26 ECD Maintenance & Care

Agency will establish agency maintenance SOP

Slide 31

- **Avoid dropping - sensitive, electronic device — similar care of a cell phone**
- Check DPM regularly
- **Always store X26 ECD with DPM inserted**
- TASER cartridges expire five years from date of manufacture
- Secure in protective holster, when not in use
 - Do not store in pockets without holster
- **When an X26 ECD needs to be returned to TASER, download the data for that unit and preserve for evidence for any concerns from a past event prior to returning. Also mark the RMA form indicating the files are evidence.**
- Avoid exposing X26 ECD to excessive moisture

Make sure you treat your X26 ECD with care. It is a sensitive electronic device similar to your cell phone. Avoid dropping it. We make them very robust but it is still an electronic device. Check your DPM/XDPM regularly, always keep the DPM/XDPM inserted into the ECD and secure it in a holster when not in use. All cartridges that have exceeded their 5 year expiration date should be used for training only. Should an X26 need to be returned to the factory for any reason, there is the possibility that this unit will be destroyed if it is being replaced as a warranty item. TASER does not retain the dataport readouts so it is up to the law enforcement agency to download the unit and save this file as potential evidence.

Avoid exposing the X26 to excessive moisture as the device is water resistant, not water proof.

Instructor Notes: The X26 ECD and the M26 ECD are electronic items. Hence, they are complex and can experience different failure modes under extreme conditions. As one example, an M26 ECD that was exposed to an intense "salt fog" test spontaneously fired a cartridge. The salt fog condensed on the trigger switch, and eventually shorted the switch, firing the ECD. At least one such failure was also reported from the field. While we have taken corrective actions to mitigate this risk, it cannot be completely eliminated. However, the BladeTech holsters for the M26 ECD and the eXoskeleton holster for the X26 ECD are designed to retain any fired probes such that they cannot project from the ECD. Further, the eXoskeleton holster has an automatic "safe" feature that forces the safety into the down (SAFE) position when holstered. These protective safeguards reasonably permit safe storage of the ECD while in the holster.

CAUTION: Use of other than authorized batteries in any ECD will void the warranty.

Should an X/M26 ECD need to be returned to the factory for any reason, there is the possibility that this ECD will be destroyed if it is being replaced as a warranty item. TASER does not retain the dataport readouts so it is up to the law enforcement agency to download the ECD and save this file as potential evidence.

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Module 5: TASER X26

Dropped or Wet X/M26 ECD

Slide 32

- If completely submerged, return to TASER

For all others:

- Safety switch down (SAFE)
- Point in safe direction and remove cartridge
- Remove DPM
- Dry X26 ECD thoroughly (at least 24 hours)
- Reinstall DPM
- Safety switch up (ARMED)
 - If discharges without pulling the trigger, remove DPM and return to TASER
- Spark test 3 full 5-second cycles
- If X26 ECD does not function properly, return to TASER
- If spark test is normal, return to service

WARNING: If an X/M26 ECD is completely submerged in water, remove it from service and return it to TASER for repair or replacement. Do not attempt to discharge it or return it to service.

If an ECD has been dropped or otherwise damaged, or if an ECD is exposed to moisture, such as splashing or rain, do not move the safety switch to the up (ARMED) position until after conducting the following check. Failure to perform this check may result in an unintentional discharge when the ECD safety switch is placed in the up (ARMED) position. ECDs exposed to extreme moisture can discharge with the safety switch still in the down (SAFE) position due to short circuiting of the electronic components.

1. Remove the TASER cartridge immediately.
2. If exposed to moisture, dry the ECD thoroughly (at least 24 hours) before proceeding.

Remove M26 ECD battery tray or X26 ECD DPM from the ECD. Remove M26 batteries from the tray.

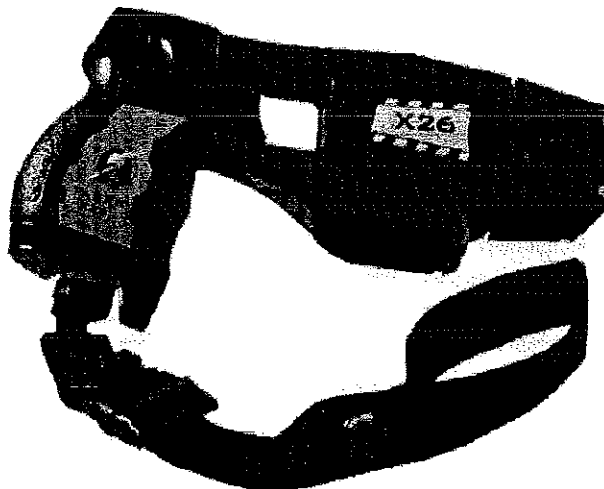
If there is any visible moisture inside the DPM well of the X26 ECD, contact TASER for a Return Materials Authorization and send your X26 ECD in for inspection. If no moisture is visible, re-insert the DPM and complete the remaining steps

- Remove data port plug from M26 ECD
 - Wipe off all exposed surfaces. Allow internal surfaces to air dry. Do not use blow dryers or compressed air
 - After 24 hours, ensure that all components are completely dry. Put the batteries back in the M26 ECD tray properly and insert the battery tray into the M26 ECD. Replace the data port plug.
 - Wait one minute before proceeding to the next step.
3. Place the safety switch in the up (ARMED) position. If the ECD discharges without pulling the trigger, place the safety switch in the down (SAFE) position, remove the batteries or DPM and contact TASER for return authorization. DO NOT reinstall the batteries or TASER cartridge or attempt to use the ECD.
 4. If the ECD does not discharge without pulling the trigger, conduct a spark test for a full 5-second cycle and ensure a rapid pulse rate and that the discharge stops after five seconds.
 5. If the ECD does not operate normally, place the safety switch in the down (SAFE) position, remove the battery tray or DPM, and contact TASER for return authorization.
 6. If the ECD does function normally, place the safety switch in the down (SAFE) position and return to normal use.

In addition to the above test, TASER recommends a thorough inspection of an ECD after being dropped. Check the entire ECD for cracks, broken CID, cracked laser/flashlight lens, etc. If any damage is found, contact TASER for return authorization. DO NOT use an ECD that shows obvious signs of damage.

— Controlled Digital Power Magazine (CDPM) —

Slide 33



CDPM

Slide 34

- The CDPM is an option for the X26 ECD only
- Lanyard disconnect = Inoperative
- Reconnect + code = Full function

The Controlled Digital Power Magazine, or CDPM allows an X26 ECD to become inoperative if taken away from the officer. Using a lanyard that attaches to the officer, if someone ripped the X26 ECD from them, the lanyard pulls a disconnect switch and makes the X26 ECD inoperative. If that person was to take the lanyard away from the officer and affix it to the X26 ECD, The X26 ECD still will not function. A code must be entered into the X26 ECD to resume normal function.

The CDPM is an option for the Law Enforcement X26 ECD model and will not work with the civilian X26 ECD model.

Instructor Notes: This product was designed for Corrections/Law Enforcement.

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Module 5: TASER X26

CDPM

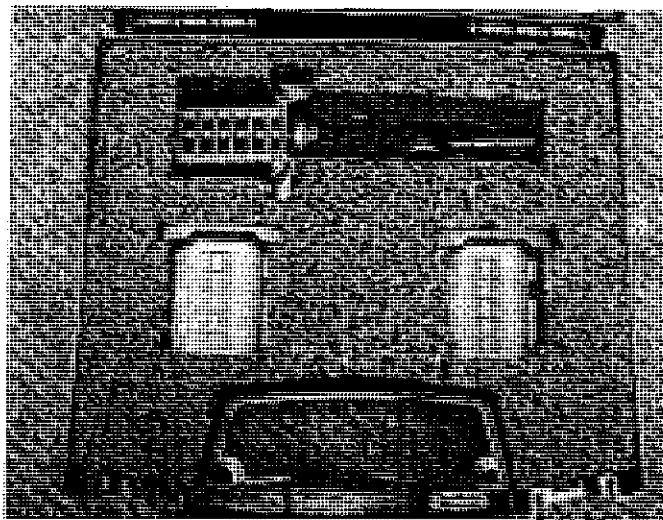
Slide 35

- X26 ECD must be configured to utilize CDPM
- Configuration can be done in the field
- X26 ECD can be de-configured to operate with standard DPM
- See CDPM presentation on the TASER Training DVD for further information

The X26 ECD must be configured to utilize the CDPM then de-configured to use a standard DMP. Configuring the X26 ECD for either can be done simply in the field using the configure/de-configure DPMs contained in the CDPM kit. Please see the CDPM folder in the Support Materials section on the Training DVD for more information.

CDPM Kit

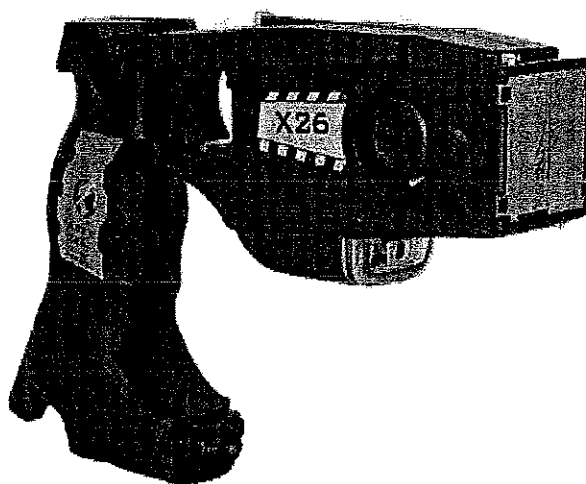
Slide 36



The CDPM kit contains the CDPM with lanyard, the green Configuration DPM and the red De-configuration DPM. The X26 ECD must be configured to work with the CDPM. Inserting the Green DPM will configure the X26 ECD to accept the CDPM. During configuration, the operator enters a 4 digit code. The illumination selection switch and trigger are used to enter the code. This code is used to re-activate the X26 ECD if the lanyard became disconnected then re-connected to the CDPM. To configure the X26 ECD to accept a regular DPM the red de-configure DPM must be inserted. After the X26 ECD is de-configured, insert a regular DPM to resume normal operation. An agency only needs one CDPM kit to configure/de-configure an unlimited number of X26 ECDs.

CDPM Kit

Slide 37



The TASER Cam is an option for the X26 ECD. The TASER Cam provides power to the ECD as well as the ability to record video and audio when the X26 ECD is in the armed position.

TASER Cam

Slide 38

- Can be used with any X26 ECD
- Replaces DPM
- 1.5 hours of video & audio
- 100 5-second cycles plus audio and video when fully charged
- Video: 320 X 240 Resolution
 - QVGA Black & White at 10 FPS
 - MPEG-4 Video/Audio Compression

The TASER CAM is rechargeable and powers both the TASER CAM and the X26 ECD. The TASER CAM replaces the DPM and provides up to 90 minutes of audio/video recording before it starts to record over itself. It provides enough power for approximately 100 5-second firings at room temperature when fully charged. The video is 320X240 resolution, records 10 frames per second in black and white and uses MPEG 4 compression. The TASER CAM records when the safety switch is in the up (ARMED) position, and stops when the safety switch is moved to the down (SAFE) position.

Instructor Notes: The TASER Cam is compatible with any X26 ECD. The TASER Cam is rechargeable and powers both the TASER Cam and the X26 ECD. The TASER Cam records when the safety switch is in the up (ARMED) position, and stops when the safety switch is moved to the down (SAFE) position.

The TASER Cam requires X26 ECD software version 18 or newer to operate. If the X26 ECD has version 15 or older software (versions 16, 17 & 19 were test versions and not released), the TASER Cam will program the X26 ECD to the version 18 or newer software the first time it is inserted. Follow standard X26 ECD programming procedures when inserting a TASER Cam into an X26 ECD for the first time and a "P" is displayed on the CID.

TASER Cam

Slide 39

- Built in infrared light source for low light and no light capability
- When lens is covered the CID flashes "88" and the LASER will also flash
- Rechargeable via USB or AC wall outlet

The TASER CAM has a built in infrared light source for low light and no light capabilities. This is automatic and the user does not need to adjust anything. If the lens is covered, when the device is armed, the CID flashes "88" and the LASER will also flash. This is a sign to the operator that the lens is covered.

Although the lens is blocked you are still recording audio.

The TASERCAM uses a USB download interface and is rechargeable via the USB or AC wall outlet.

Instructor Notes: Users should read the TASER Cam Operator's Manual prior to charging the TASER Cam or inserting it into an X26 ECD.

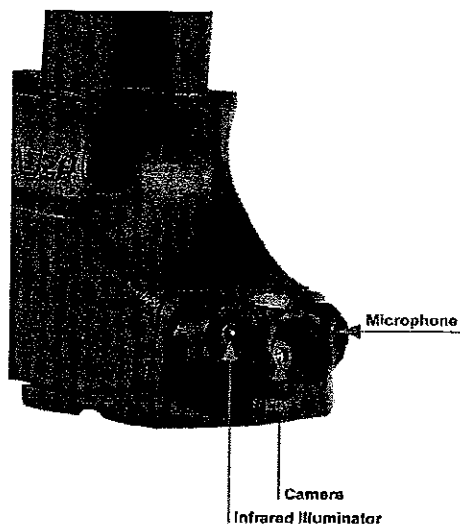
If the lens is covered when the X26 ECD is armed, the CID flashes "88" and the LASER will also flash. This is a sign to the operator that the lens is covered.

5

Module 5: TTASER X26

TASER Cam

Slide 40

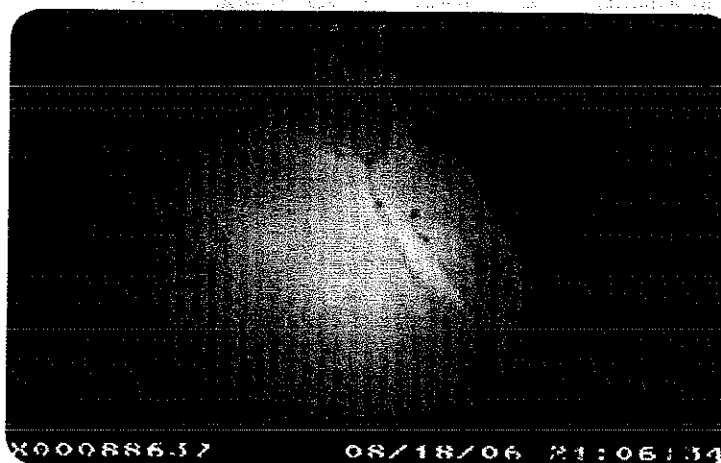


The TASER Cam pictured here, has the main camera lens in the center, the microphone shown on the right and the low light infrared illuminator shown here on the left.

TASER Cam

Infrared only no LASER/LIL- complete darkness

Slide 41



In this video the operator turned off the LED lights and LASER on the X26 ECD and the video is shot in a completely blacked-out room. You can see the subject clearly in the video. The subject is wearing a black shirt although it appears to be white.

Instructor Notes: The individual is wearing a BLACK colored shirt. Utilizing the TASER Cam's infrared sensor in complete darkness with no Low Intensity Lights or LASER lit, the shirt appears to be white.

TASER Cam Use

Slide 42



Here is a good example of using the benefits of the TASER Cam. The officer activates the X26 ECD with TASER Cam to document the incident before, during and after the deployment. In this incident the officer was keeping two suspects at bay while awaiting back up.

TASER Cam Maintenance

Slide 43

- Periodically check and clean the lens with a cotton swab

The only maintenance required of the TASER CAM besides re-charging it is to periodically wipe down the lens with a cotton swab.

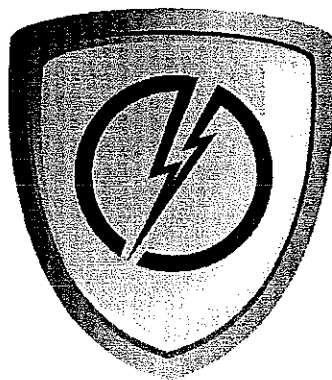
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Module 5: TTASER X26

Module 6

TASER Cartridge

6



P r o t e c t L i f e

Instructor Certification Course * TASER® X26™ Electronic Control Device

Version 17 Released May 2010

Cartridges

Slide 2

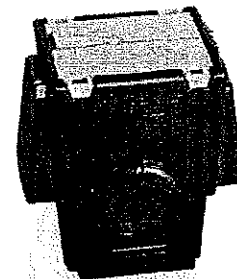
- TASER Cartridges are used in the X26, M26 and SHOCKWAVE ECDs
- Available in 15, 21, 25 and 35 ft
- All TASER Cartridges have a 5 year expiration from date of manufacture

Slide 3

The blast doors are on the front of the cartridge. They were initially sonic-welded to the cartridge body in earlier designs. In May 2006, the blast doors were redesigned so that they could be snapped onto the cartridge body. This design has proven to be more robust and there have been fewer reported incidents of blast doors being knocked off of the cartridge.

There are two cartridge locking tabs on each cartridge, one on each side. These tabs must be depressed simultaneously to release the cartridge from the front of the ECD or from the XDPM, TASER Cam or extra cartridge clip. It is not necessary to depress the cartridge locking tabs to load a cartridge.

The 15 ft cartridge has a solid yellow blast door and uses a regular probe.



15 ft. (4.6 meters)
Yellow Blast Doors
Live Cartridge
Regular Probe

Slide 4

The 21 foot cartridge has silver blast doors and contains a regular probe.

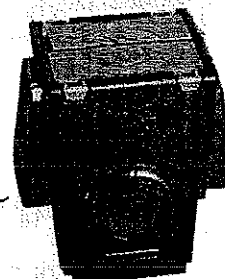
Test

15 FT Yellow
Reg Probe

21 FT Silver
Reg Probe

XP25 Green
extended probe

Blue Training
non conducting
short probe



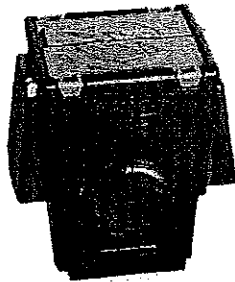
21 ft. (6.4 meters)
Silver Blast Doors
Live Cartridge
Regular Probe

Instructor Notes: The older style cartridges (black and yellow striped blast doors) do not need to be replaced. They can be used in the field until their expiration date. They can then be used for training

6

Module 6: TASER Cartridge

Slide 5

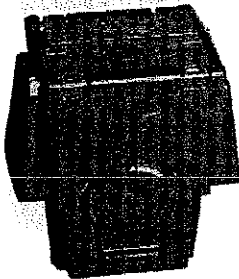


*XP 25 ft. (7.6 meters)
Green Blast Doors
Live Cartridge
XP Probe*

The XP 25 foot TASER Cartridge has green blast doors and uses the XP probe.

Instructor Notes: TASER Cartridges can be used in the field until their expiration date. They can then be used for training.

Slide 6



*LS 21 ft.
(6.4 meters)
Blue Cartridge/
Blue Blast Doors
Short Probe*

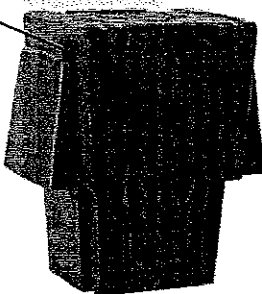
The 21 ft Live Simulation, or LS TASER Cartridge is solid blue with blue blast doors. It uses non-conductive monofilament line tethered to the probes to prevent the electrical charge from traveling through the probes when it is deployed. It is designed to be used with the padded TASER Sim Suit worn by a role player during scenario based training and has a smaller needle than the other TASER Cartridges to assist in minimizing penetration into the Sim Suit.

Slide 7

*White
Wedges*



*Nonconductive
Electrodes*



In June 2006, the blue LS TASER Cartridge underwent a design change. The metal electrodes at the front of the cartridge were replaced with non-conductive electrodes to allow for drive stuns on a role player during simulation exercises without the role player receiving an electrical shock. However, a role player could feel a shock if the drive stun is applied with the side of the cartridge or if the cartridge is deployed less than 2 inches away from the body. These LS Cartridges can be identified by the white wedges visible from the base of the cartridge.

Cartridge Inspection

Slide 8

- Blast doors attached
- No cracks
- Locking tabs are not compressed
- Expiration date

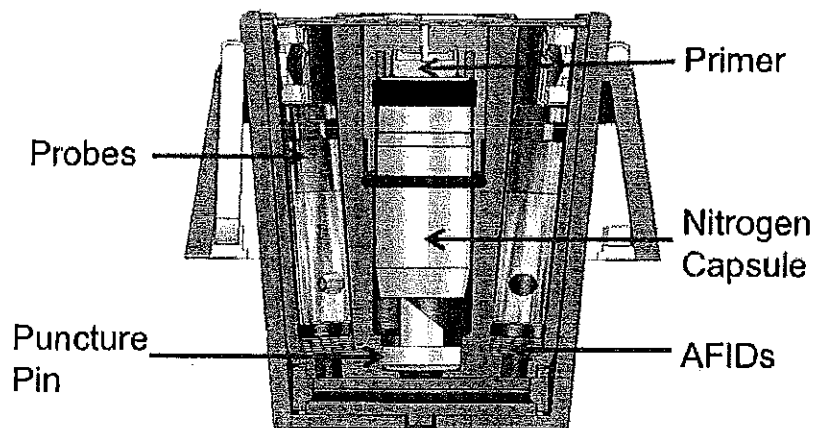
Operators should inspect their cartridges. Make sure the blast doors are in place, there are no cracks, the locking tabs are not compressed and check to make sure the cartridge is not expired. The expiration date of the cartridge can be found on the back next to the serial number.

6

Module 6: TASER Cartridge

TASER Cartridge

Slide 9



In this diagram, we can see the internal components of the TASER Cartridge and their relative location prior to deployment. Shown here are the probes, puncture pin, primer, nitrogen capsule and the AFIDs

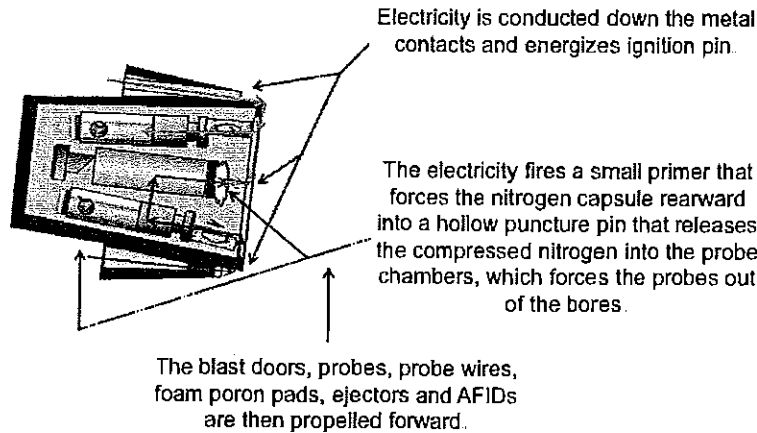
Instructor Notes: Electricity fires a small primer that forces the nitrogen capsule rearward onto a hollow puncture pin. The compressed nitrogen in the capsule is then released into the two chambers forcing the blast doors, probes, probe wires, and AFIDs forward.

Note that both probes are angled away from center 4 degrees. The firing bay of the TASER ECD is angled down 4 degrees which allows for the reversible loading of the 15', 21', and 25' cartridges.

The 35' cartridge does not allow for reversible loading.

TASER Cartridge

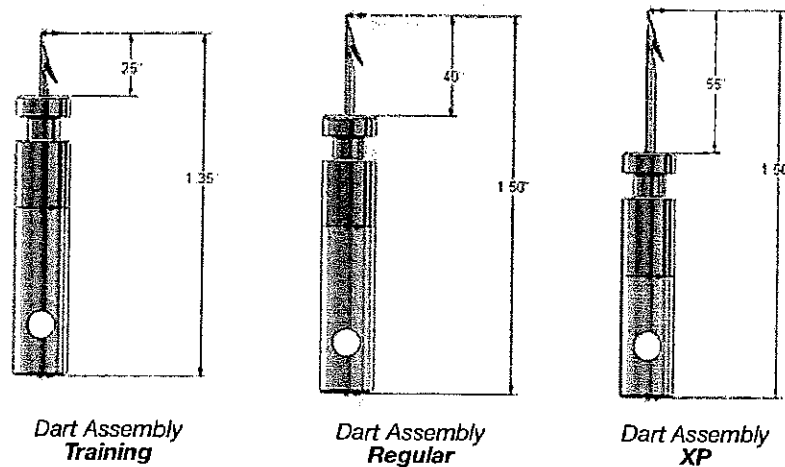
Slide 10



Now let's talk about how all the components function together to create a TASER Cartridge deployment. When the trigger is pulled, electrical charge is conducted down the metal contacts to the front of the TASER Cartridge and across the blast doors to energize the ignition pin. This electrical charge then fires the small primer that forces the nitrogen capsule rearward into a hollow puncture pin that releases the compressed nitrogen into the probe chambers, which forces the probes out of the bores. The blast doors, probes, probe wires, foam poron pads, ejectors and AFIDs are then propelled forward.

TASER Cartridge Probe Assembly

Slide 11



These are the 3 different probes contained in current production TASER cartridges. They all use a bi-metal design and a blunt end nose.

The probe on the left is used by the blue LS cartridge and has a .25 inch needle. The regular probe in the center is used by the 15 and 21 foot TASER cartridge and has a .40 inch needle.

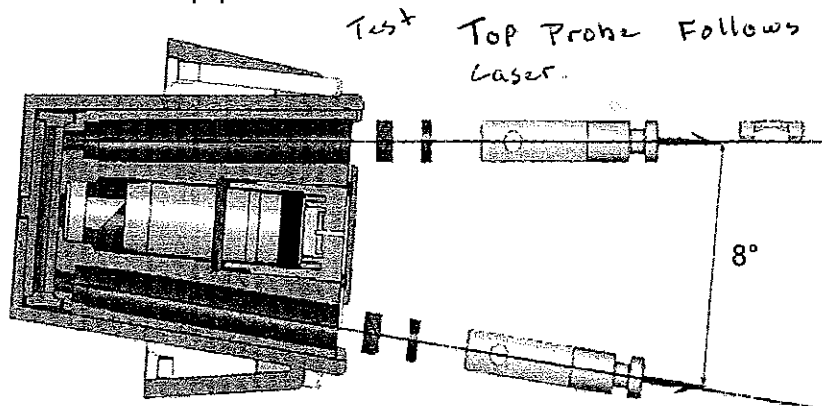
The XP probe on the right is used by the XP 25 and XP 35 foot TASER cartridges and has a .55 inch needle.

Instructor Notes: Probe lengths converted to metric: **Training** dart .25"=.6 cm, probe assembly 1.35"=3.4 cm
Regular dart .40"=1 cm, probe assembly 1.5"=3.8 cm **XP** dart .55"=1.4 cm, probe assembly 1.5"=3.8 cm

15, 21, LS & XP25 TASER Cartridges

The top probe is "horizontal" relative to ECD

Slide 12



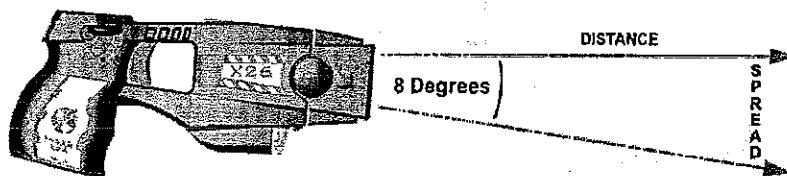
Bottom probe 8-degrees down

The 15, 21, LS and XP 25 ft TASER Cartridges utilize an 8-degree angle between the probes to achieve its probe spread. The top probe is propelled horizontal relative to the ECD when inserted into an M26/X26 ECD. The bottom probe is propelled downward at an 8-degree angle. With these particular TASER Cartridges, there is no affirmative top or bottom. Each probe is positioned inside the cartridge at 4-degrees off the centerline. The firing bays of the M26/X26 ECDs are set at a 4-degree down angle. When the TASER Cartridge is loaded, the top probe becomes horizontal relative to the ECD and the 8-degree angle is achieved.

TASER Cartridge Probe Spread For 15, 21 & 25 Foot Cartridges

Slide 13

- Rule of thumb: ~1 foot (.3 m) spread for every 7 feet (2.1 m) of travel



	(m)	.6m	1.5m	2.1m	3m	4.5m	6.4m	7.6m
Target Distance: 25ft	(ft)	2'	5'	7'	10'	15'	21'	25'
Spread: 38"	(in)	4"	9"	13"	18"	26"	36"	38"
	(cm)	10cm	23cm	33cm	46cm	66cm	91cm	109cm

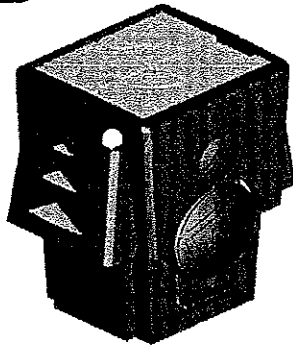
For the 15, 21, LS and XP 25 foot TASER Cartridges, the rule of thumb to estimate probe spread is that for every 7 feet the probes travel from the TASER ECD to the target, there will be approximately 1 foot of distance between the probes upon impact. Remember the LASER of the M26/X26 ECD's indicates the relative point of aim of the top probe.

Instructor Notes: Probe lengths converted to metric: **Training** dart .25"=.6 cm, probe assembly 1.35"=3.4 cm
Regular dart .40"=1 cm, probe assembly 1.5"=3.8 cm **XP** dart .55"=1.4 cm, probe assembly 1.5"=3.8 cm

Ferg 1535

XP 35 ft

Slide 14



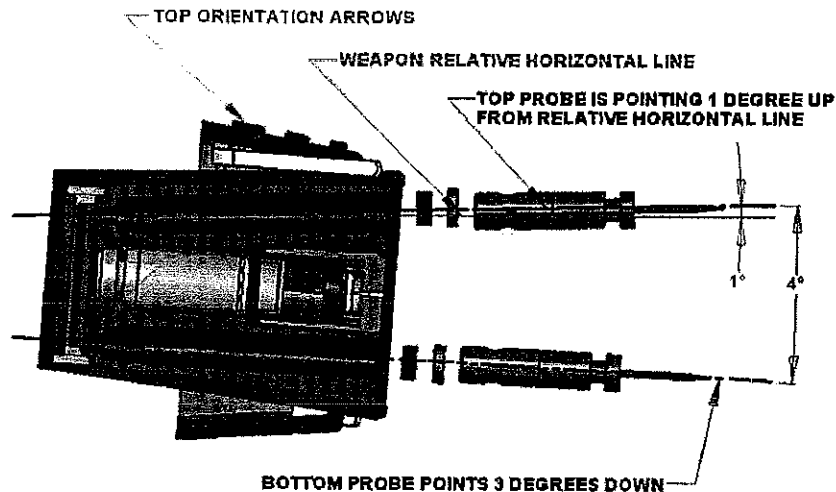
Special Duty
(10.67 meters)
Orange Door
Live Cartridge XP Probe

The XP 35 foot TASER Cartridge is a special duty cartridge that does not follow the same probe trajectory as the other TASER Cartridges. It has orange blast doors and utilizes the XP probes.

Instructor Notes: The 35 foot cartridge requires extra training and practice firing to use this cartridge. Unlike the other TASER cartridges, this cartridge does not offer reversible loading on the ECD. The probes are set at a different angle than all other TASER cartridges. There is an up and a down. If the cartridge is not loaded properly the point of aim/point of impact of the probes will be greatly affected. At distances less than 25' the top probe travels above the LASER. (see XP35 trajectory slide)

XP35 TASER Cartridge

Slide 15



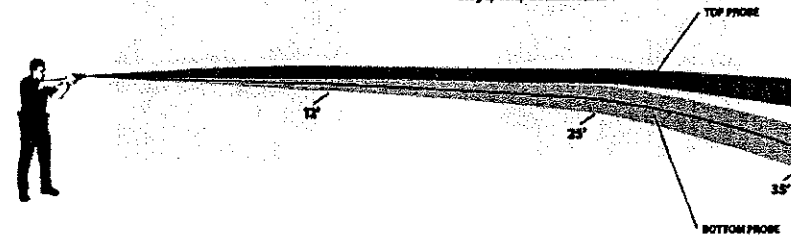
This cutaway of the XP 35 foot Cartridge illustrates the difference between the probe angles of the other TASER Cartridges. When inserted into the M26/X26 ECD, the top probe is 1-degree above relative horizontal and bottom probe sits at 3-degrees below relative horizontal with a total difference of 4-degrees between the probes. Because of this unique design, the XP 35 foot TASER Cartridge must be loaded with an affirmative top and bottom orientation. There are raised orange arrows on the top of the cartridge to aid in this action. If the cartridge were loaded upside down, the probes would possibly deploy into an unintended area of the target, the ground, or miss the target altogether.

Probe Trajectory For XP35 Special Duty Cartridge

Slide 16

CARTRIDGE TRAJECTORY: 35' CARTRIDGE

WARNING:
At distances less than 25', the top probe travels above the laser sight point up to a maximum of approximately 4" at a distance of 12'. Adjust your aim accordingly at these distances to avoid hitting sensitive body areas.
See graphic representation below.



AVERAGE DART TRAJECTORY IN CORRELATION TO A LASER SIGHT LINE			
DEPLOYMENT	12' (3.66 m)	25' (7.62 m)	35' (10.67 m)
TOP PROBE AVERAGE	+ 4.0" (10.16 cm)	+ 0.7" (1.78 cm)	- 8.0" (-20.32 cm)
BOTTOM PROBE AVERAGE	- 3.0" (-7.62 cm)	- 15.0" (-38.10 cm)	- 34.0" (-86.36 cm)

--- Average Probe Trajectory — Laser Sight Line [Icon] Top Probe: 95% of probes fall within this area [Icon] Bottom Probe: 95% of probes fall within this area

Here is an example of the XP 35 foot TASER Cartridge's probe trajectory. You can see the effect of the 1-degree up angle on the top probe's flight path as it travels. At a distance of approximately 12 feet, the flight trajectory of the top probe is approximately 4 inches above the LASER. This could pose a safety concern. Officers who will be deploying the XP 35 foot TASER Cartridge should receive additional training on its performance to gain proficiency and understanding of its flight characteristics.

Instructor Notes: The battery lasts longer on the shelf and performs better in colder temperatures than alkaline or NiMH rechargeable. The average spread of the XP35 cartridge can be calculated from the above chart by adding the distance of the top probe above the horizontal line to the distance of the bottom probe below the horizontal line.

The average spread of the XP35 is:

Distance	Spread
12 feet (3.66 meters)	7 inches (17.78 cm)
25 feet (7.62 meters)	23 inches (58.42 cm)
35 feet (10.67 meters)	26 inches (66.04 cm)

Note that at distances less than 25 feet the top probe travels above the LASER. At 12-13 feet the probe is at its maximum height which is approximately 4 inches above the LASER.

Officers who will be deploying the XP35 should receive additional training on its performance.

6

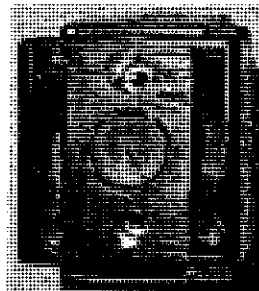
Module 6: TASER Cartridge

Slide 17

**Cannot
Discharge**



**May Discharge
(but not reliably)**



The TASER Cartridge on the left shows an expended cartridge. The probes and wires are missing and there is a scorch mark near the center of the cartridge. This cartridge can be used for dry fire reloads and drive stuns, but cannot be deployed again.

The TASER Cartridge on the right still contains its probes and wires, but is missing the blast doors. If the blast doors are removed from the TASER cartridge it may not deploy as the electrical charge may not be directed to the center of the cartridge, which is necessary for deployment. Do not attempt to re-install the blast doors if they are knocked off or removed.

Instructor Notes: All discharged cartridges used for dry fire reloads, drive stuns, isolation drills or empty cartridge drills shall be visually checked for probe(s) and /or wires. Each cartridge shall be sparked in a safe direction for 5 seconds to insure they are safe for training.

Do not use any cartridges with probe(s) and/or wires for empty cartridge training drills.

Wires

Slide 18

- Steel with insulated coating
- Can break easily if stepped on or pulled
- Inadvertent contact with wires or the probe during discharge can result in electrical shock

The wires are steel with insulated coating, but can break easily if stepped on or pulled. Inadvertent contact with the wires or probe during discharge could result in electrical shock.

Instructor Notes: Note that the effect of contact with a wire or probe while taking a suspect into custody is relatively minor and will likely not cause NMI to the officer. Usually, officers will instinctively pull away. It is recommended that officers grab the suspect in a different area, away from the probes and the wires.

Crossing the wires from multiple cartridges during discharge may cause the circuits to short out and reduce or eliminate the delivered charge to the subject.

Wires

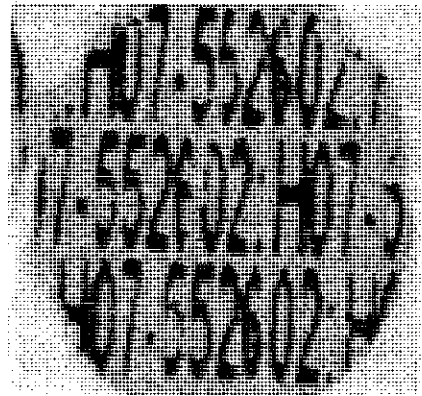
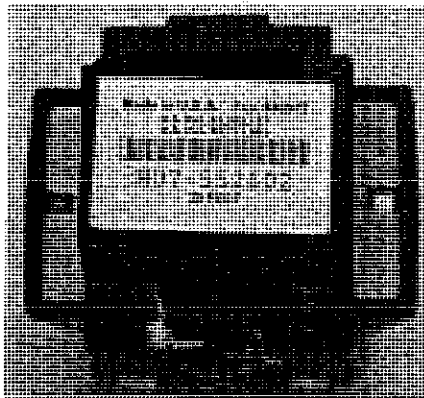
Slide 19

- TASER operator should advise officers to avoid wires during restraint
- Avoid crossing wires when multiple TASER ECDs are deployed

TASER operators should advise officers to avoid the wires during subject restraint. Also, try to avoid crossing the wires of multiple TASER ECDs.

AFIDs

Slide 20



AFID is an acronym for Anti-Felon Identification. When a TASER Cartridge or a Smart Cartridge is deployed, 20-30 identification tags called AFIDs are dispersed. The AFIDs are printed with the serial number of the cartridge they are deployed from and help in determining the purchaser of the cartridge. The AFIDs were originally created for civilian sales of TASER ECDs to deter criminal use. As an offshoot of this, many law enforcement agencies collect AFID tags at the scene of a deployment to determine the number of cartridges deployed and who deployed them. This helps to prevent abuse and protects officers from unfounded allegations through documentation of use.

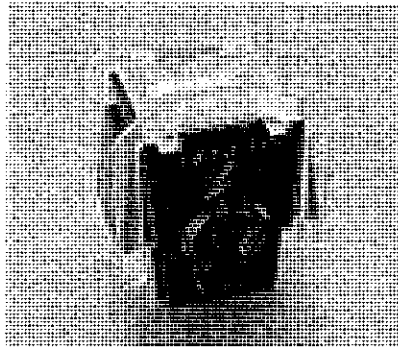
6

Module 6: TASER Cartridge

TASER Cartridge Shipping Covers

Slide 21

Now we will discuss TASER Cartridge shipping covers.



TASER Cartridge Shipping Covers

Slide 22

- On cartridges for safe shipping
- Cartridges cannot be loaded onto a TASER ECD with the cover in place
- Covers should be removed prior to cartridges being taken into the field

Each TASER Cartridge is shipped with a shipping cover attached. The cartridge cannot be loaded into a TASER ECD with the cover in place and this cover should be removed prior to taking the TASER cartridge into the field.

Instructor Notes: TASER has taken several progressive steps over the last few years to enhance reliability of TASER Cartridges arriving safely and undamaged when they are shipped from our facility to any location worldwide. Some of these steps include using sturdy boxes and static-resistant foam.

TASER has taken another step toward safe shipping of cartridges by placing a plastic cartridge cover over each cartridge that is shipped. These covers fit over the blast doors and keep them securely in place even when handled roughly, and would contain the probes in the event of a discharge. These cartridge covers are in compliance with the U.S. Department of Transportation Regulations.

Cartridge cover removal instructions (see following pages) will be included in every box of cartridges.

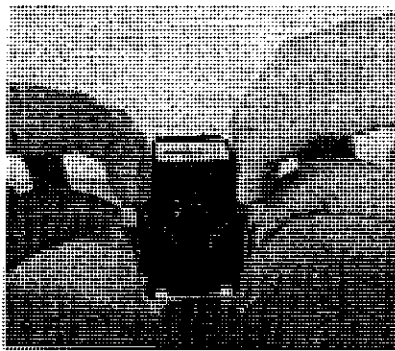
Once the cartridge cover is removed, it can be properly recycled or disposed of. Please do not return the cartridge cover to TASER.

The cartridges cannot be loaded onto ECDs with the cartridge covers in place. The new cartridge covers should be removed prior to being taken into the field.

TASER Cartridge Shipping Covers

Slide 23

Pull out the sides of the cartridge shipping cover with index and middle fingers

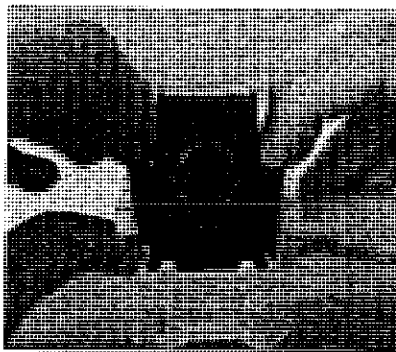


To remove the shipping cover, place the TASER Cartridge face down on a non-conductive flat surface and do not hold the cartridge facing any body part. Carefully use your fingers to grab the locking portion of the shipping cover and place your thumbs on the side of the cartridge.

TASER Cartridge Shipping Covers

Slide 24

Push up on cartridge with thumbs



Carefully pull the locking portions away from the cartridge and the shipping cover should slip off. Some covers can be saved should you need to ship a TASER Cartridge back to TASER.

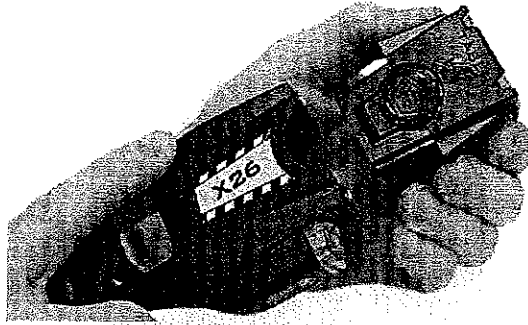
6

Module 6: TASER Cartridge

Loading TASER Cartridges

Slide 25

- Hold the TASER cartridge by the sides while keeping all body parts away from the front

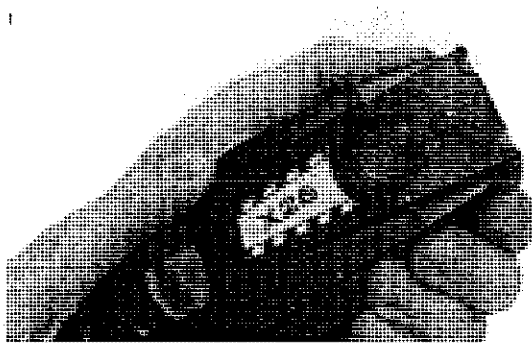


When preparing to load the TASER cartridges into the X26 ECD, carefully hold the TASER Cartridge on both sides of the cartridge while keeping your fingers and all parts of your body away from the front of the TASER cartridge at all times.

Loading TASER Cartridges

Slide 26

- Ensure the Safety Switch is in the down (SAFE) position
- Point the X26 ECD in a safe direction
- Insert the TASER cartridge into the deployment bay until it is seated



Ensure the safety is in the down (SAFE) position and point the ECD in a safe direction. Carefully insert the TASER cartridge into the deployment bay of the X26 ECD until it is seated. You may hear an audible click when this occurs. Gently tug the cartridge to ensure its seated.

Cartridge Safety

Slide 27

- Deployed by electrical discharge
- Can be discharged by static electricity (TASER Cartridge only)
- Keep hands away from the front of cartridges
- Do not inadvertently point cartridges at yourself or at anyone else

TASER Cartridges are deployed by electrical discharge. Unexpected deployments can be caused by static electricity so its imperative that you keep hands away from the front of the cartridge and do not inadvertently point cartridges at yourself or anyone else. Always keep your hands away from the front of the cartridge. The following pictures are some examples of keeping your hand in front of cartridges during inadvertent or accidental discharges.

Warning: Use caution not to arc the ECD closer than 2 inches from a live (unfired) cartridge. If this is done, the cartridge could discharge. Since the cartridge is not attached to the ECD there would be no electricity flowing to the probes but the probes could strike an unintended person or object.

This is a primary concern when the cartridge is removed to apply a drive stun and the cartridge is held in the hand near the location of the drive stun. See the section on drive stun for further information.

Although highly unlikely, it is possible for TASER cartridges to deploy outside of the TASER ECD, or in an ECD that has not been activated. Care should be taken to keep electrostatic discharge away from TASER cartridges, and to not point the cartridge at anybody you do not intend to deploy it on.

TASER cartridges should be kept away from conditions known to create an electrostatic discharge, such as rubbing cloth (i.e. jacket liner or pocket) across a cartridge in an environment known to create static shocks.

Attempting to deploy a cartridge with no blast doors may deliver a small charge to the wires and probes. If the cartridge does not fire, any conductive material that comes into contact with the front of the cartridge shortly thereafter could draw a spark across the front and deploy the probes.

6

Module 6: TASER Cartridge

Hand In Front of TASER Cartridge

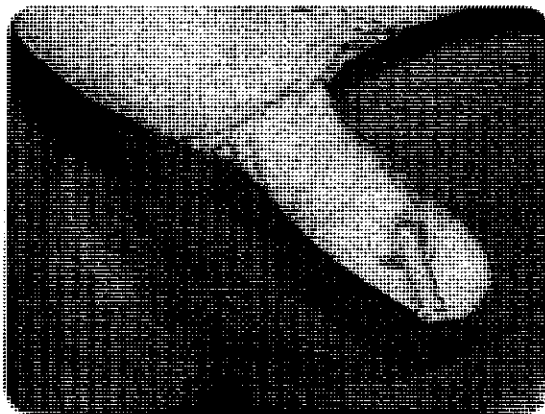
Slide 28



These photos illustrate what can happen if hands are placed in front of the cartridge during discharge. Most of these incidents occurred during officer training exercises as the officers placed hands in front of the cartridges during discharge. Although the intent was most likely not to deploy the probes into their own hands, the results can be seen in these photos when proper safety guidelines are not adhered to and accidents occur.

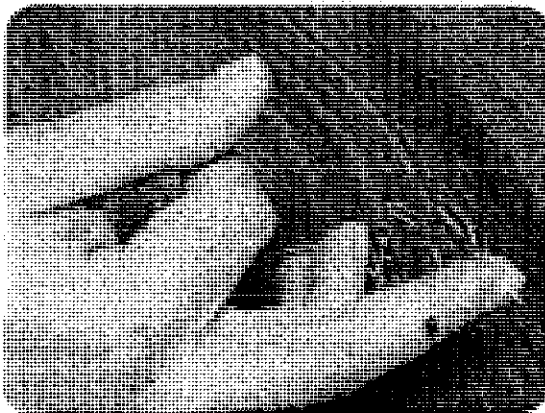
Hand In Front of TASER Cartridge

Slide 29

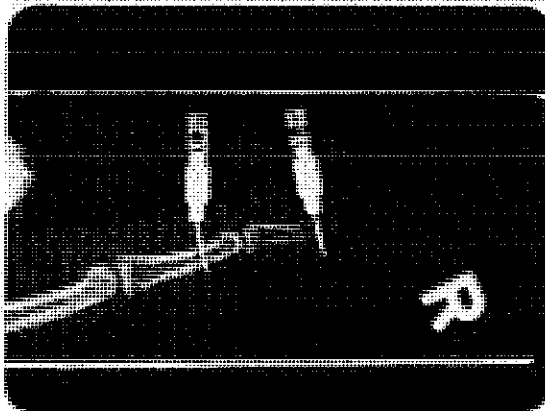


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Slide 30



Slide 31

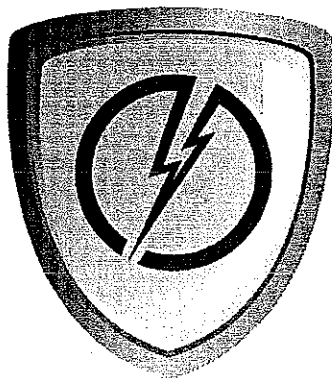


Instructor Notes: These photos are of three different training incidents, where students failed to put the safety switch in the down (SAFE) position prior to loading a cartridge. Additionally, the officers placed their hands in front of the blast doors and attempted to load the cartridges during the discharge cycle.

Module 7

Tactical Considerations

7



P r o t e c t L i f e

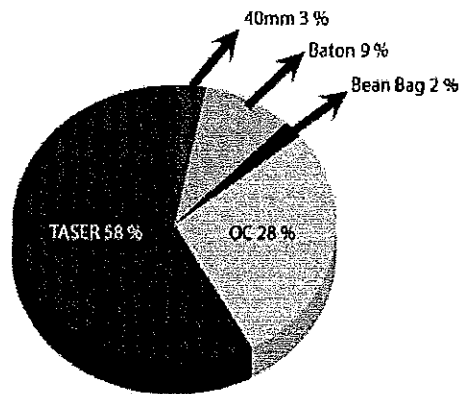
Instructor Certification Course * TASER® X26™ Electronic Control Device

Version 17 Released May 2010

PoliceOne Feb, 2010 Poll

Slide 2

“The last time you deployed a less-lethal weapon, it was a...”



In February, 2010, PoliceOne.com conducted a survey of their readers asking them to name the last less-lethal weapon they used. Not only was the TASER ECD the most used weapon, it was used a majority of the time. It only makes sense that we focus and train on best practices of how to use the most commonly used law enforcement weapon today.

Source:

<http://www.policeone.com/less-lethal/articles/2001750-Keeping-your-less-lethal-options-open>
02/16/2010

Highway Drug Interdiction with Lt. Andrew Hawkes

Keeping your less lethal options open

Less lethal weapons and training are always improving, and in generations to come, we'll have new tools and resources

Earlier this month, PoliceOne polled our readers with the question: “The last time you deployed a less-lethal weapon, it was a...” The results above speak for themselves.

If you're a baby boomer, chances are when you started out in law enforcement your less than lethal weapons options were limited. If you were in an escalating situation where verbal commands verbal judo wasn't working, your next best course of action was probably cold cocking someone in the jaw, “Kel” lighting him, or maybe using a slapjack on the perp.

But as times changed and police brutality cases became more frequent, a new generation of law enforcement officer joined the ranks — one that could be called “more politically correct” — and they adopted a force continuum with less lethal weapons such as batons and chemical and OC sprays.

It wasn't long before even more creativity and advancement came along with bean bag and rubber ball rounds for the 12 gauge, and innovative less lethal ways of stopping vehicular pursuits included the spike strips and the PIT maneuver.

Police accountability, abuse of power, and even more liberal views from the courts have brought about an age where we as cops are almost expected to be assaulted before we can act as necessary, and even after we do, we are subject to internal and criminal investigations and sometimes left out in the cold as far as our rights being protected for doing our jobs.

Now, less lethal weaponry has evolved into incapacitating force with such options as the TASER® Electronic Control Device, electric transport belts, and stun-cuffs, all the while being recorded by digital recording devices attached to our vehicles, uniforms, heads, or all of the above.

7

Module 7: Tactical Considerations

The point of all this is, there are a number of less lethal options and each has its place — it's the perpetrator's actions, their resistance, and the threat they present which determines which tool you pull from the Batman belt.

In the generations to come, there will no doubt be more new tools and weapons to hit the law enforcement marketplace. Some may be good, others not so good. But the one thing we as cops must always remember is the old saying, "Don't bring a knife to a gunfight."

Deciding on the necessary force, and which weapon to use to deliver that force, is often a split-second decision for an officer. Whatever force you choose will eventually be scrutinized by your department, the courts, and the media. Having the most up-to-date training and instruction on less lethal options will better prepare you for any future confrontations. We must always be aware of our surroundings — including sizing up the suspects confronting us — and must never rule out (or be afraid to use) deadly force if that means protecting our lives or the lives of others.

All three generations — Baby Boomers, Gen X-ers, and Millennials — are working side by side out on the beat, and I believe that each generation has something they can share with the other to help us all become better officers. And think about this: the cops who have not yet even entered the academy will almost certainly make regular use of crowd control devices that rely entirely on sound!

Discussing use-of-force situations that officers have encountered in their careers is a good way to calculate if the situation would be handled differently (or with different levels of force, or with newer less lethal options) today than when it occurred in the past. Younger officers should actively seek out those discussions with the cops who have a few years under their belts, and hashes on their sleeves. On the other side of that coin, the "old guys" can really learn some innovative new things being taught in academy training that didn't even exist "back in the day."

I won't be "shocked" the next time I whip out my baton, ready to land a strike to a suspect's forearm, only to watch him hit the concrete in .03 seconds because the young rookie next to me has already deployed a TASER round into the combative perp.

I may crack a smile at that rookie while he is filling out his report, then Veteran Bob and I just might head out to dinner to discuss over a cheeseburger how that scenario would have played out "back when dinosaurs roamed the earth."

About the author

Lt. Andrew Hawkes is a 17-year law enforcement veteran. He began working highway drug interdiction full time in 1993. Hawkes has won many awards in Texas for his interdiction success. He has been an interdiction instructor for police departments, area police academies and for the U.S. Drug Enforcement Agency's basic narcotic investigators' school. Hawkes has completed graduate courses in public administration and holds a bachelor's degree in criminal justice from Dallas Baptist University. Lt. Hawkes is the author of *Secrets of Successful Highway Interdiction*, an eBook which is available for purchase and download here, and is a "how to" for the street officer wishing to develop drug interdiction skills. Hawkes has been featured in *The Dallas Morning News* and *TNOA Narcotic Officer's Quarterly* as well as many area newspapers and law enforcement Web sites.

Test question

Flammability

Slide 4

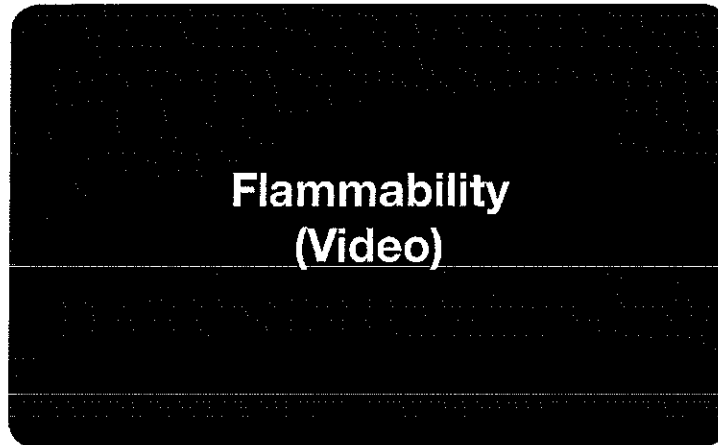
- TASER ECD can ignite explosive materials, liquids, fumes, gases, vapors, or other flammable substances and materials
- Gasoline, sewer gases, meth labs, flammable personal defense sprays, hair gels, butane lighters, etc.

A TASER ECD can ignite explosive materials, liquids, fumes, gases, vapors, or other flammable substances and materials such as gasoline, sewer gases, meth labs, flammable personal defense sprays, hair gels, butane lighters, etc. Some personal defense sprays use flammable carriers such as alcohol and could be dangerous to use in immediate conjunction with TASER ECDs.

7

Module 7: Tactical Considerations

Slide 5



This video shows a TASER ECD being applied to a conductive mannequin being exposed to different types of liquids. Notice the probes are spaced so there is at least a ½ inch spark gap that allows the electricity arc through the air. Note how each liquid reacts to the TASER ECD spark.

Flammability

Slide 6

- Personal Defense Sprays
 - Some propulsion agents (carriers) are flammable
 - Some carriers are alcohol and oil based

When we talk about testing your OC's or other chemical agent's flammability with your TASER ECD, you should understand that some include flammable agents for propulsion carriers or to lower its freezing point. Some carriers are alcohol or oil based. Some are water based. Some agents use a mixture formula that is proprietary to the manufacturer or unknown to the public. Some of these formulas can ignite and cause flames when applied proximal to a TASER ECD.

Ferg 1548